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M-Commerce Adoption in Kajaani

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ABSTRACT OF THESIS

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Abstract

The objective of this final year project was to study mobile commerce (m-commerce) adoption in the city of Kajaani. The research includes studies of how consumers' behaviors, macro-environmental factors and growth in the consumers' usage of mobile phones and Internet might lead to the adoption of m-commerce. This research will primarily benefit network operators and mobile phone manufacturers; it will allow the latter to gain insight as to how potential consumers will react towards newer technologies. The other expected outcome derived from this study is the increase of readers' awareness about the facts surrounding m-commerce in Finland.

The methods used to implicate the research were a desk study, surveys and an interview. The desk study was performed using published books and articles. Reliable Internet sources such as the government and The New York Times Internet Web sites were utilized. A survey pilot was designed and tested to aid in assessing the suitability of the questions and measurement scales; the pilot survey has been conducted on a pool of 20 people who have been randomly selected in the city of Kajaani. The final draft was conducted on a pool of 50 respondents who were selected using the stratified sampling technique. A face-to-face interview has been performed in one of the local mobile phone retailers.

In conclusion, there is a strong demand for m-commerce in the city of Kajaani. People who belong to the 30-34 segment of the population were the ones who were the most inclined to adopt m-commerce. Results demonstrated that m-commerce's services with the highest appeal included e-mail, banking, news and ticketing; these services are in alignment with what consumers are already accustomed to with the fixed e-commerce. In spite of an overwhelming acceptance of m-commerce, there are a number of concerns in relation to m-commerce. The most important of these seems to be related to the issues of security. The experience with fixed e-commerce did not seem to significantly alter the effects of these deterrents.
Because m-commerce is still in its infancy stage in Finland, further studies should be performed.

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I dedicate this work to my family. Many years they have been supporting and guiding me throughout my education. They have been the greatest support a son and a brother could hope for; namely my father, Alain Berard, my mother, Graziella Berard, my sister, Emilie Lubrano Lavareda and my brother, Boris Berard, for without them I would not have been able to come this far.

To all, thank you.

« Vaincre sans peril, c'est triompher sans gloire »

TABLE OF CONTENTS

1 INTRODUCTION

M-commerce resulted from the synergy of two distinct services, namely the Internet and mobile telecommunication. As Craig Lord stated (Times Online, 2004) “The convergence of two of the fastest-growing communications technologies ever developed – mobile phones and the Internet – was billed as a potential Big-Bang moment for the business world.”

The potentials of m-commerce are enormous and its applications go far beyond the Internet browsing or booking a hotel room. “Mobile terminals seem to be the ideal channel for offering personalized and location-based services as well as for one-to-one marketing. Other very popular applications are mobile advertising, mobile financial services (stock exchange, bank payments, and insurance services) and mobile entertainment, for instance” (Bakom, 2000). The world wide mobile internet market has grown dramatically over the last two years going from 200 million to 1.3 billion mobile phones users and, according to industry experts, soon internet-connected mobile phones will out-number the internet-connected PCs; the overall number of active PCs world wide is between 500 million to 750 million, which does not come even close from the 1.3 billion mobile phone figure (Craig Lord, 2004).

Nokia’s statement on the company’s Web site adequately resumes m-commerce:

“With the Internet going mobile the number of possible peer-to-peer or consumer-to-service connections is exploding and the way in which we are using our mobile phones is expanding. This offers tremendous new market opportunities.”

1.1 Motivation and objectives of study

The primary objective of this paper is to demonstrate if consumer adoption of m-commerce in the city of Kajaani will emerge as a result of consumers' behaviors, diverse macro-environmental factors and growth in the consumers' usage of mobile phones and Internet. The second objective aims at increasing readers' awareness about the facts the surrounding mobile commerce in Finland.

E-commerce trade has become more popular in Finland. In 2003, a survey conducted by Statistics Finland has shown that the value of e-commerce is to reach € 2.1 billion in 2004. Among all the Internet buyers, Finns that fall into the 20-29 brackets are the most active customers; in comparison, only 3 % of those over the age of 60 have made a purchase using the Internet. (eFinland, 2004 a.)

Around the world operators have experienced drawbacks with the m-commerce technologies. Consumers quickly responded to the poor services in this sector. Michael Mahoney said, "Few segments of e-commerce have been more over-hyped, and more disappointing, than mobile commerce." According to Adam Zawel, Yankee Group mobile analyst, people fail to see the usefulness of such technology, "There needs to be a reason to make a purchase using your wireless device. No one's going to bother with an inferior experience on wireless when they can do it on their home PC" (Mahoney Michael, 2001). However, due to technological progresses in the mobile phone industry and growth in the Internet usage, such as On-line payments, prospects for m-commerce remain substantial.

The objectives of the study can be classified as follow:

- Determine which age group has the highest level of Internet and mobile phone usage in terms of purchasing
- Gauge what are the consumers' expectations and concerns in relation to m-commerce
- Consumers' awareness of m-commerce
- Who among the different categories of age is the most inclined to adopt m-commerce in the city of Kajaani?

By determining the level of consumers' adoption in relation to m-commerce, this research will primarily benefit network operators and mobile phone manufacturers. It will allow the latter to gain insight as to how potential consumers will react towards newer technologies; it provides relevant information in regards to eventual strategic moves that shall be made in order to meet a specific group of consumers' expectations and avoid costly mistakes. Second, this paper may also increase consumers' awareness in relation to the mobile industry in Finland. Issues such as operators' coverage and networks improvements are disclosed as well as how Finnish operators acquired the right to exploit newer technologies in terms of networks. It provides readers with reliable information that will ultimately help them decide if both mobile operators and manufacturers are exploiting the technologies to best suit consumers' needs and wants.

1.2 Organization of the report

The first part of the report is aiming at providing readers with a background of the development of wireless devices and Internet usage in Finland. The second part will analyze the service adoption process and its implications. The following section will examine the Finnish networks landscape and the restructuring of the industry in relation to m-commerce**.** The forth section will determine the level of the political involvement in relation to the mobile phone industry**.** The following part will address the innovations and issues that are related to m-commerce. The sixth section explains the research methodology used and research findings, after which, the conclusion is presented. The last part of the report includes the limitations surrounding the set forth study as well as suggestions for future research. Appendix 1 examines the questionnaire design and appendix 2 provides the SPSS outputs.

2 BACKGROUND

Over the past few years, Finns have been more inclined to use the wireless telecommunication model and demonstrated gain in confidence in the usage of the Internet; readers must bear in mind that m-commerce emerged from the synergy of the latter. This section will examine the factors that lie behind such increase in the usage of both technologies, namely mobile handsets and Internet.

2.1 Wireless telecommunication culture

“Culture is a set of beliefs and values that are shared by most people within a group. In France, food is intimately linked with the French culture” (Blythe Jim, 2001, 230-231). Wireless technologies account for a large part of the overall Finnish telecommunication landscape. “Because of the long, long mobile culture in Finland, owning a mobile phone has become like owning a watch or a set of house keys” (Sarah Lyall, 2002). According to the publication of the Ministry of Transport and Communication (2003), Finland has a 90% mobile phone penetration rate that is one of the highest in the world. In 2003, the amount phone calls that have been made with the help of fixed phones have decrease by 22%; ranging from 3, 1 billion in 2002 to only 2, 5 billion at the end of the year. Inversely, the same year, the proportion of phone calls made using a wireless device has increased by 7 % compare to 2002, which equals to 3, 4 billion calls.

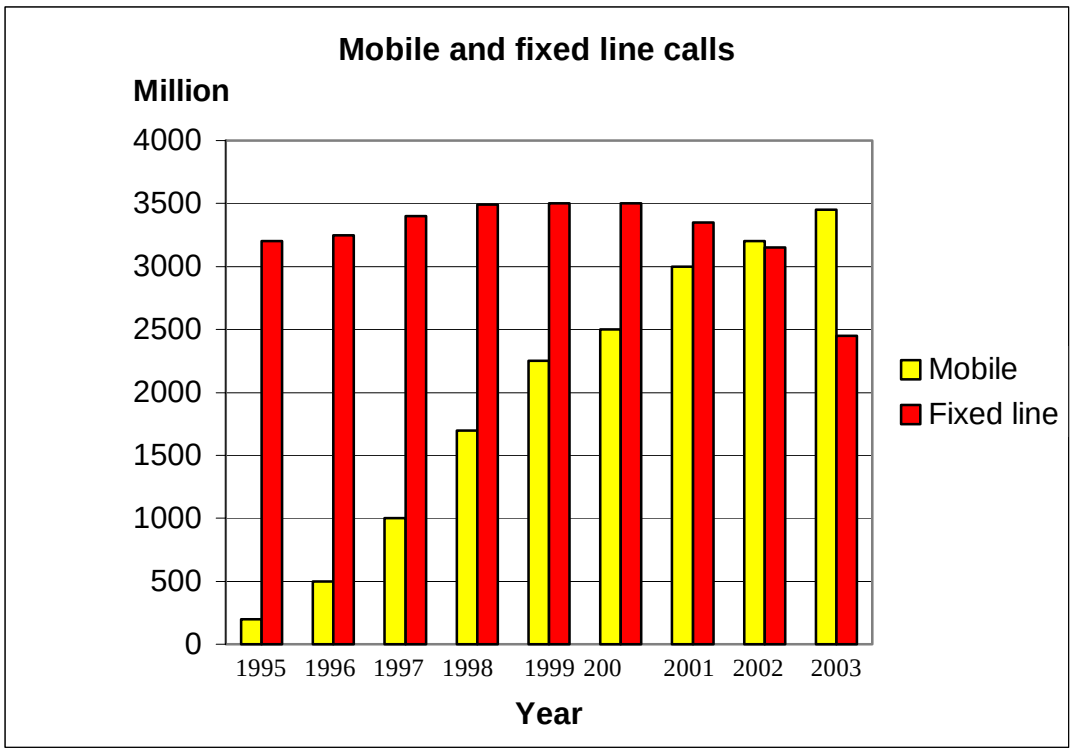

Fig. 1 Mobile and fixed line calls (Statistics Finland, 2003)

The number of fixed telephone lines has followed past trends and decreased by 6 % compared to 2002. In 2003, the number of mobile phone subscriptions amounted to 4, 7 millions. To put this into perspective, 91 Fins out of 100 has a mobile phone in Finland and 80% of these subscriptions are privately owned. (Tilastokeskus, 2004 a.) Finland mobile phone industry has grown over the years. Mika Uusitalo, chief technology officer at Sonera Ltd., said "We should top 100% market penetration by the middle of the next decade" (Baker Stephen, 1999). An ever increasing portion of the Finnish population is opting for online services.

2.2 Reference groups

Among the different categories of group, the family is the most powerful in influencing consumer decision making. First, the parental influence on children is the earliest and shapes the child's perception from that moment on. Second, the parents' desire to provide the best for their children inflicts on their buying behavior. Third, in the case of siblings, the influence emerges either as a role model, where the sibling is older, or as an adviser, where the sibling is younger. (Blythe Jim, 1997, 104)

Jan Virkki, marketing manager for Makitorppa, Finland's largest cell phone retailer, said, "A relatively normal age to get a mobile phone is now 7, when children starts to have activities without their parents. Many parents want to have the security of being able to contact their kids" (Sarah Lyall, 2002).

2.3 Success of Internet

European countries are increasingly connected to the Internet and the growth of the e-commerce is tailored to such augmentation in the Internet usage. According to William C. Cobb, senior vice-president for international at eBay[1], Europe has become a particularly fertile area and predicts that the European based business will equal that of the United States. The company's figures are tailored with his statement. Since May 2003, eBay's traffic has increased by 51 % in France and almost doubled in Italy. Amazon[2] has experienced such growth in Europe as well. Many other European born companies have flourished in the cyber space and are among the top 10 Web destinations of Europe; France's Wanadoo[3], Tiscali[4] in Italy, Lycos Europe[5] for Spain and the German T-Online[6] just to name a few. According to Researcher IDC, in 2003, **"**there were 67 million Internet shoppers in Western Europe." The number of Internet shoppers in predicted to increase to a quarter of the whole European population in 2004. (Reinhardt and Hof, 2004, 20-21)

In 2003, Finland has experienced a similar growth in the Internet broadband connections. The overall number of subscriptions has doubled to roughly half a million in one year; 380 000 Finns subscribed to DSL and the remaining 90 000 subscribed to modem. (Tilastokeskus 2004, b.) In April 2004, the number of people that had an e-mail address amounted to 2.4 million and 59 % of them used the e-mail on a daily basis. (eFinland, 2004 b.) However, according to a survey conducted by TNS Gallup, Finns take advantage of the versatility of the Internet since 80 % of users have browsed Web site such as Etuovi.com or Oikotie.com; these portals propose online housing sales. Finland: Study: Estate agents' online services popular. (eFinland, 2004 c.)

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[1] www.ebay.com
[2] www.amazon.com
[3] www.francetelecom.com (Wanadoo is a branch of France Telecom)
[4] www.tiscali.com
[5] www.lycos-europe.com
[6] www.t-online.de

2.4 On-line payments

Finns spend more time and money on the Internet. According to MD Kare Casals of Electronic Commerce Finland (ECF), Finns have spent € 1, 7 billion in purchasing products or services via Internet in 2003. This figure accounts for 6 % of all Finland's retail trade and attests for the growth in this sector since online purchases only amounted to 1, 1 billion in 2002. To further illustrate such growth, a well-known Finnish retail chain, namely Anttila, has experienced a 20 % increase in online trade. (eFinland, 2004 d.)

In Finland, the number of payment transactions for On-line purchases has doubled every year. According to Luottokunta[7], almost 200 000 payment transactions were made in 2003. These figures indicate that there is a strong increase in the number of internet buyers. (eFinland, 2004 e.) In addition, the number of On-line purchases paid with a credit card tripled. The fastest growth was experienced in the travel sector. According to Petri Carpén of Luottokunta, competition by lower cost airlines was the reason behind the increase in online customers. (eFinland, 2004 f.) Overall, 790 000 Finns have purchased products or services online, and almost 670 000 people, which represent 19% of Finland's mobile phone users, have surfed WWW or WAP (Wireless Application Protocol) sites on their mobiles phones. (eFinland, 2004 g.)

[7] www.luottokunta.fi

3 SERVICE

This section will briefly examine the consumers' adoption process. The following part will provide insight in relation to the differences that exist between a service and a product. The last section will determine the implications that lie behind such differences.

3.1 Needs and wants

"A need is a perceived lack; want is a specific satisfier" (Blythe Jim, 1997, 21). Utilitarian needs that lead consumers to focus on the functional aspects of the product and hedonic or experiential needs that lead consumers to think of the product in terms of pleasure or the aesthetic aspects of it. Consumers may fulfill both categories of needs while purchasing a product or service. Mobile phones play an active and major role in Finland. People need to buy these, whether for professional or personal purposes, but they also appreciate the many modernistic features that come with the latest wireless handsets. In addition, it can also be translated by a want. The definition of a want is tailored to a person state of mind and whether one believes that a want is something inessential or unimportant. For instance, to most people living in Finland, owing a mobile phone could be seen as a necessity, whereas in some countries of the world it could be seen as a luxury. In other words, an individual might just need to call another person and wants a state of the art mobile phone to perform the task. (Blythe Jim, 1997)

3.2 The adoption process

Adoption process

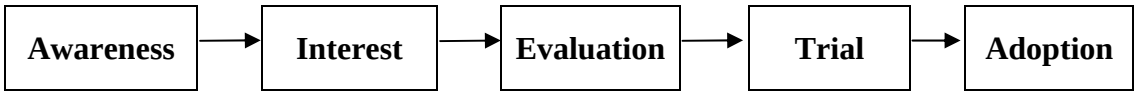

Fig. 2 Adoption Process (Robertson Thomas, 1967)

As the above figure demonstrates, consumers usually go through a process composed of five steps. However, services characteristics are in sharp contrasts with products; services are intangible, production and consumption happen at the same time, there is a lack of triability and services are perishable. Unlike products, services cannot be tested before a consumer agrees to purchase because the only way of testing it is to use the service. “Consumers are buying a promise: the service provider is offering certain benefits that may or may not appear, and the consumers have little redress if the service does not come up to expectation.” (Blythe Jim, 1997, 12)

Purchase of a Physical Product

Purchase of a Service

Fig. 3 Comparison of purchase of physical products and services (Blythe Jim, 1997)

3.2 Risks and uncertainties

Consumers will naturally aim at reducing risks. The risks do not only mean the eventual loss of the purchase price, but also consequential losses; in the event of a purchase of services, the consequential losses may be substantial. If a consumer decides to carry out an operation such as payment using his or her mobile phone and fails to do so, the situation can become very embarrassing. Because of the risks of consequential losses, consumers will avoid the cheapest service; it is a well-known fact that most consumers believe high prices call for high quality. Though this phenomenon can be observed with the purchase of tangible products, but it is far more common with the purchase of services. (Blythe Jim, 1997, 28-29)

As set forth earlier, due to the services' intangibility, consumers are faced with a greater degree of uncertainty when purchasing services. In addition, the variability of the service stresses even further the consumers' uncertainty. In the case of m-commerce, if a consumer tries in vain to browse the Internet to check his or her e-mails, for instance, the operator will still bill the consumer in relation to his or her usage of Internet. This is outside the scope of errors or misunderstandings; the problem only arises if what was described to a consumer in good faith turns out differently from the consumer's expectations. Uncertainty commonly arises from the gap between what a consumer is expecting and what the service provider actually provides (Blythe Jim, 1997, 29). For instance, the increased data transmission level in the UMTS networks enables users to download an MP3 song in a relatively small length of time; that is roughly 30 seconds to 1 minute. If the maneuver takes more time to be executed, then it will inexorably lead to consumer's dissatisfaction. "These handsets run processors three times faster than normal phones and have enough memory to download nine hours of music or two hours of video" (Ihlwan Moon, 2004).

3.3 Handling dissonance

When consumers are dissatisfied with a given service, they tend to react in three main ways. First, in the form of voice responses that involves the consumer to come back and complains. Second, consumers use private responses that include telling friends about a poor performed service. Last, a third party would take legal actions against a given service provider. Service providers aim at avoiding such experience by explaining the service in

great details prior to usage, increase consumers' awareness on the various drawbacks while using a given service and directly check with consumers, during the provision of the service, if they are satisfied. Unlike banks and insurance companies, Finnish operators and manufacturers do not periodically call their customers to inquiry about the quality of the services that they provide. On the other hand, in Sonera's Internet Web site, there are phone numbers that allow consumers to call on a 24/7 basis, it is also possible to ask questions in the form of message. Nokia does not have a 24/7 policy, however, consumers can join the "Nokia Club" at no cost that allow them to call and talk to professionals. Even though compensations for a failed service are often difficult to quantify, it is important to take a consumer's complaint in account. In service provision market, consumers rely heavily on word-of-mouth and a brand image can quickly be damaged; skillful negotiators are needed for such tasks in order to find the best way of compensating a consumer. Because of the intangible nature of the service, consumers cannot carry out the usual processes of information gathering. Advertising is less verifiable, suppliers are often unable to be specific about a given service and most services are less subject to close regulation by government or trade bodies. As a result, potential consumers are inclined to rely heavily on personal recommendations by friends or colleagues. In order to efficiently gauge how consumers feel, greater emphasis should be put on discussion and direct consumers' feedback, rather than formal marketing research. (Blythe Jim, 1997, 32-35)

3.4 Drive

"The drive is the force that makes a person responds to a need" (Blythe Jim, 1997). A drive is a gap that resides between where a person is at the present time and where he or she would like to be. The intensity of the drive is proportional to the contrast between the 2 situations. If a person has a higher drive, it will facilitate the action process. By having a high drive, a person will easily take actions to fulfill its wants; even a lower drive would still stimulate a person into taking action by a reminder. In addition, while achieving the desired state, a person will eventually seek for something more. "Each individual has a level at which this type of stimulation is enjoyable and challenging, without being uncomfortable or worrying" (Bythe Jim, 1997). This level is called the optimum stimulation level (OSL). (Blythe Jim, 1997, 13-14)

3.5 Customization

Companies tend to offer more benefits in order to attract a greater pool of potential consumers. The most frequent offering comes in the form of low prices. However, as set forth earlier, consumers in the service market do not react to a cut in price as much as in the product market. Hence, marketers have designed a myriad of other offers, which consumers will substantially benefit from; offers such as customization, more convenience, faster service, an extraordinary guarantee, membership benefits program etcetera. (Kotler Philip, 1999, 29-34)

Past studies have shown that m-commerce did not meet expected results. One of the obstacles that have slow down growth lays in the sharply contrasted consumers' attitudes towards the Internet. Therefore, mobile phone manufacturers strive at designing custom made phones. Mobile network operators continuously seek new and innovative ways to create differentiation. One of the best ways to accomplish this is through the delivery of highly personalized services. One of the most powerful ways to personalize mobile services is based on location. According to Mr. Jorma Ollila, Chairman and CEO of Nokia, Nokia has allocated additional resources to customization and enhanced customer focus. (Nordic Wireless Watch, 2004.)

Andy Buss, mobile analyst of market researcher Canalys in Reading, said, "Carriers now have the power to influence handset design and command enough volume to make customized handsets viable." Nokia's business model relies on cutting out huge volumes of standardized phones in its own factories around the world. However, the company has decided to shift from mass production to mass customization in order to follow trends and meet consumers' demand and expectations (Reinhardt, Bonnet & Crockett, 2004); Mass customization is the ability to prepare on a mass basis individually designed products, service and communications (Kotler Philip, 1999, 24). In addition, Nokia is on the brink of introducing a third generation mobile phone that is tailor-made to TeliaSonera's needs. "The Nokia 6630 phone will have a version specially made for the needs of TeliaSonera customers." The objective behind such move is to promote the 3G technologies and promote new standard in wireless telecommunication. (Helsingin Sanomat, 2004 b.)

Nokia's direct competitors did not rest on its laurels. Ericsson[8], the world largest mobile phone manufacturer, is well aware that Sonera[9] has already implemented its 3G network and that two other licenses are in the process of deployment; namely Elisa[10] and Suomen 3G[11]. Aiming at grasping a greater number of shares of the Finnish market, the company has signed 3G contracts with both mobile operators. (Nilsson Jenz, 2002.)

[8] www.ericsson.com
[9] www.sonera.com
[10] www.elisa.com
[11] www.suomen3g.fi

4 FINLAND'S NETWORKS

First, this section studies Finland's network readiness as well as the Finnish network landscape. The second section will show the different networks used in diverse areas of Finland. The last section will examine reasons behind the network fragmentation.

4.1 Finland's networks readiness

Finland has the necessary environmental and infrastructural capacities to welcome state of the art networks. The World Economic Forum has conducted a study in order to gauge the readiness of economies to participate and benefit from information and communication technology (ICT) developments. The Network Readiness Index (NRI) following three dimensions when examining economies' readiness. First, the general macroeconomics and regulatory environment for ICT were scrutinized. Second, the 3 key stakeholders' readiness were gauged; namely individuals, businesses and governments. Third, the NRI assessed the stakeholders' current usage of ICT. In 2003, among a pool of 40 participants, the United States held the first position, followed by Singapore. However, Nordic countries hold three of the top five positions; Sweden and Denmark follow Finland in fourth and fifth position respectively. (eFinland, 2004 h.)

4.2 WAP limitation

The only brush most consumers have had with mobile phone commerce has been through WAP on traditional GSM[12] networks. WAP allows users to access digital information via handheld wireless devices, such as mobile phones, pagers, two-way radios, smart phones and communicators. The main issue that resides in the WAP technology is it cannot support a sufficient amount of files, and, therefore, limits m-commerce applications capacities; industry experts describe WAP as a failure because of its uptake and low usage patterns. (Samtani, Leow, Lim & Goh, 2003)

4.3 Wideband leader

M-commerce enabled mobile phones will use the third generation (3G) wireless network. The reason for such implementation of updated networks lies in the superiority in terms of capacities compared to the second-generation networks (2G).

4.3.1 UMTS

Mobile phone operators aim at ultimately implementing the Universal Mobile Telephone System (UMTS) or Wideband Code Division Multiple Access (WCDMA). The WCDMA is a digital radio communications of Internet. According to Ericsson Internet Web site, "WCDMA is the dominating 3G technology, providing higher capacity for voice and data and higher data rates." The utilization of a new spectrum allows WCDMA to provide 50 times higher data rate than GSM networks. WCDMA is also known as UMTS. "WCDMA is by far the most widely adopted 3G air-interface technologies in the new IMT-2000 frequency band" (Nokia, 2004 b.) WCDMA defines new standards in terms of wireless technology. It is the fastest and more flexible service for data transmission, it was designed to support greater services such as m-commerce and it is a global technology with virtually universal reach (Nokia, 2004 c.)

[12] Global System for Mobile communication

UMTS network allows a higher frequency band, up to 2 GHz[13], with a larger bandwidth[14] that equals 5 MHz[15] as well as provides higher speeds, up to 2 Mbps in a fixed or wireless environment and 384 Kbps[16] in a mobile environment. Alternatives to the UMTS network exist. Main reasons for network operators to provide alternatives lay in the readiness and deployment costs of up-dated networks. Since the year 2000, wireless operators were working towards adopting the third generation networks (3G). These networks will enable consumers to use m-commerce.

4.3.2 EDGE

As set forth above, in spite the fact that mobile phones will be operational over the world, various networks were designed. “An enhanced Data rate for Global Evolution (EDGE) is a radio based high-speed mobile data standard” (Mobile Info, 2004). EDGE has been originally engineered by the mobile phone manufacturer Ericsson[17] with the objective of being exploited by networks operators that have not been awarded the UMTS spectrum. EDGE capabilities allow Global System for Mobile (GSM) operators to deliver data services at roughly the UMTS networks’ speed. The very essence of EDGE’s usefulness lies in its ability to provide a migration path to UMTS by implementing now the necessary modifications in modulation; modulation that will be required in the future in order to utilize UMTS networks. In other words, realize a higher data rate transport using current 200 kHz GSM radio carrier by altering the type of modulation used. (Mobile Info, 2001.)

[13] Abbreviation for *Gigahertz* (1 gigahertz = 1000 megahertz)
[14] ”The amount of data that can be transmitted in a fixed amount of time” (more info at www.webopedia.com)
[15] Abbreviation for *Megahertz* (1 megahertz = 1000 kilobits)
[16] Abbreviation for *Kilobits per second* (data transfer speed)
[17] www.ericsson.com

4.4 Finnish networks landscape

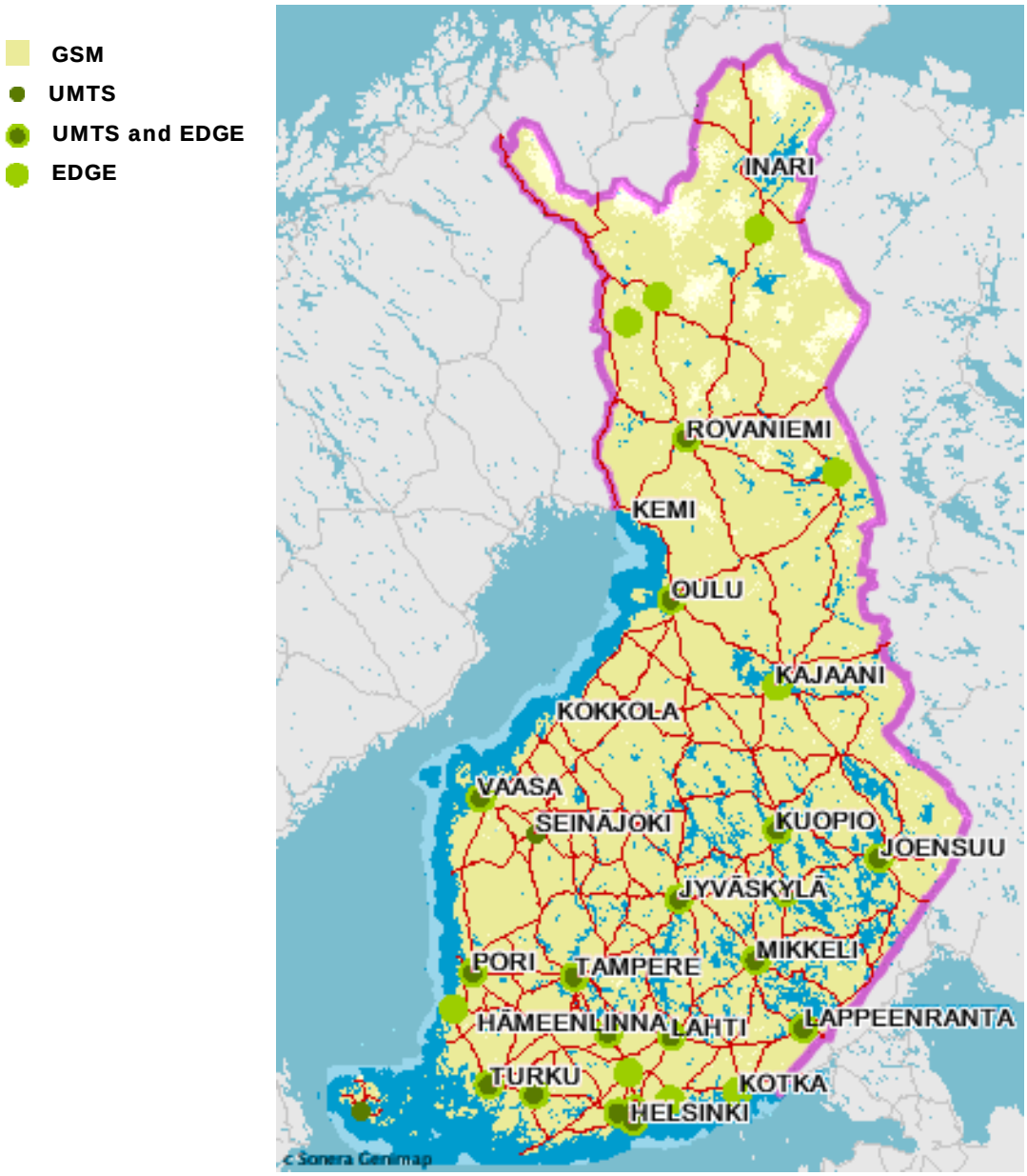

Fig. 4 Sonera coverage map (Sonera, 2004 a)

Fig. 5 EDGE in Kajaani (Sonera, 2004 a)

As the above figures 4 and 5 demonstrate, the UMTS networks are not readily available everywhere in the country; only major cities such as Helsinki, Turku and Tampere benefit from UMTS capabilities. Enhanced Data rate for Global Evolution (EDGE) has a predominant position in other areas of Finland such as Kajaani.

4.5 Reasons for network fragmentations

Cost efficiency is the underlying reason for mobile operators' rapid adoption of EDGE. Using the GSM networks, EDGE only requires a software improvement; whereas network redeployment is necessary to exploit The Wideband Code Division Multiple Access (Wireless Week, 2002). Apart from the fact that EDGE technologies are cost efficient to mobile phone operators, it also allows faster connection, greater transferable volumes of data, improvement in functionality and able to synergize with GSM networks in order to benefit from global coverage. (Nokia, 2004 a.) After discussing with Mr. Leskinen Tero, salesperson from the DNA+ store in Kajaani, it was concluded that not only the UMTS networks were not deployed in the Kainuu area, but also the store in which he is working at the moment does not carry any of the m-commerce enabled mobile phones. In addition,

Sonera will keep operating the EDGE network in remote areas because of the small density of the population it is not worth investing millions to set up a UMTS infrastructure. The implementation of UMTS networks is, nevertheless, irremediable. EDGE and GPRS technologies are only transitional phases. “By virtue of the UMTS decision, Finland is liable to make sure that at least one third-generation mobile network in accordance with European UMTS standard will be built in this country” (Ministry of Transport and Communication, 1999). The extent to which countries are willing to implement UMTS networks goes far beyond the market demand. UMTS networks became the *de facto* standards by a decision of the European Union Council; only 15 European countries are concerned since the Council’s decision was taken prior to the enlargement. As of the 1st of January 2002 at the latest, the 15 must allow UMTS networks within their national territory. (Licenses for Third-Generation Mobile Networks, 1999 a.)

Third-generation mobile phone services are launched in Europe. Since the beginning of 2003, operators have opened their networks to consumers in their respective countries. Companies such as Deutsche Telekom’s T-mobile unit started 3G in Germany, Telefonica Moviles in Spain, Telecom Italia Mobile in Italy and so on. (Business Week, 2004, 18-19)

The 12 of October 2004 was a milestone in the Finnish wireless telecommunication industry. TeliaSonera[18] has launched the first UMTS network. As set forth earlier, the mobile phone operator does not cover the whole country; only 20 major locations are concerned (Helsingin Sanomat, 2004 a.) TeliaSonera is the market leader in the mobile communication sector. The company has a customer base of 2,264,000 consumers and it is the largest mobile operator in Sweden and Finland. TeliaSonera’s main competitors are Elisa[19] and DNA[20]. (TeliaSonera, 2004.)

[18] www.teliasonera.com
[19] www.elisa.com
[20] www.finnet.fi (DNA is a branch of Finnet)

5 GOVERNMENT INVOLVEMENT

The intent of this section is to demonstrate how one of the macro-environmental aspects of a country can deeply affect it. The Finnish government is involved in Finland's wireless industry; the author will attempt to shed light on the outcomes of such involvement for the Finnish mobile phone industry. Governments usually have policies concerning trade and industry in order to ensure a growing economy and increase prosperity; a government could accentuate privatization of former state-owned companies or, in this case, grant licenses. (Blythe Jim, 2001, 24-25)

5.1 Licenses acquisition process

3G licenses have been granted to Finnish mobile phone operators by mean of a Beauty Contest; all applicants needed to provide necessary information as to how they were going to construct and manage their 3G infrastructures. "A key area in which Finland is known worldwide in telecommunication circle is deregulation" (Ahonen Paavo, 2004.) The Telecommunication Market Act states that a license could only be granted if applicants fulfill several prerequisites (Ministry of Transport and Communication, 1999):

I. Necessary financial resources to fulfill the obligations of a telecommunications network company
II. Follow the rules and regulations in relation to telecommunications
III. Possess radio frequencies that would be in alignment for the applied activities
IV. Meet basic consumers' needs and wants in the field of telecommunications

V. Be able to compete against each other
VI. Technically highly developed
VII. Have a high quality in terms of service
VIII. Safe and reliable and inexpensive to allow a better transition from current networks to more sophisticated ones

According to the Ministry of Transport and Communication Web site, the Finnish government has granted licenses for constructing a third-generation telecommunications network to four of the major Finnish telecommunication companies:

- Radiolinja[21]
- TeliaSonera
- Suomen 3G
- Finnet

Among the pool of other applicants, these four operators had the required profile to fully exploit the new technology. Operators need a certain length of time to overcome the expenses that 3G networks occasioned. In accordance with the Telecommunications Market Act, licenses are granted for a fixed period of twenty years. The Ministry deliberately accelerated the granting process in order to shelter Finland from aggressive competitors; getting ahead of the competition is one of the cornerstones of the high-technological market (Aaker David, 2001). The Ministry ensured that Finland would remain in competition with other European countries as being a pioneer in the implementation of third-generation mobile technology. (Ministry of Transport and Communication, 1999 b.)

To further illustrate the level of cooperation between the Government and Finland's mobile phone manufacturers and operators, the 16 of November 2001, while visiting Japan, Mr. Olli-Pekka Heinonen, the Finnish Minister of Transport and Communications, made the first-intercontinental phone call using the UMTS network; setting a worldwide standard for third-generation mobile network. It has been seen as a milestone because the phone call was made between two operators' 3G networks; the NTT DoCoMo network in Japan and the Sonera network in Finland Finnish Minister of Communication Makes a UMTS Phone Call from Japan to Finland. (3G Newsroom, 2001.)

[21] www.radiolinja.fi (a branch of Elisa)

5.2 Political involvement effects

Most European carriers had to disburse billions of euros to acquire the licenses. Licenses allowed operators to deliver mobile-phone services without any interferences and it refrained other competitors from using the same radio frequencies. Ms. Goli Ameri, President of eTinium Inc, said European mobile phone operators have spent over $120 billion in 3G licenses, and the expenses that occur to update their networks will amount up to $7 billion per market. Ms. Ameri added that substantial returns on investments will not arise for another five years from now (Goli Ameri, 2001). For instance, the British-based firm Vodafone has paid €31 billion for third generation licenses (Gumbel Peter, 2004). The situation is even more problematic in some European countries. According to Adam Guy, Senior Analyst for Strategis Group, the situation in Europe is alarming regarding some companies' financial health. For instance, in the United Kingdom, the government is considering allocating some money back to five carriers that have shared the $36 billion expenditure in order to acquire 3G licenses. (Wireless Review, 2001.)

As set forth earlier, Finland's operators did not have to directly invest in the 3G licenses. Finnish operators' major expenditures lay in networks upgrade and deployment. By charging high license fee government imposes an indirect tax which mobile uses have to bear by paying more for making calls. By giving "free" licenses government can create a good environment for technology start up companies, because the operator has more money to invest and less up-front fees. (Ministry of Transport and Communication, 1999.)

6 M-COMMERCE

This section will briefly examine the most relevant features of m-commerce as well as the security issue. A selection of the following features has been made upon feedback provided by respondents on the questionnaire and by the innovative nature.

6.1 Ticketing

There are more than games to m-commerce. According to Crockett Roger (Business Week, 2004) new services being developed aim at replacing consumers' credit cards or cash because their mobile phones will ultimately enable them to purchase items directly or through On-line payments (Crockett Roger, 2004, 62-64). The Finnish airline sector has benefited the most from the Internet. A Finnish airline, Finnair, has introduced a new Internet reservation service. Features include a price-based search and a seating map. As a result, customers can compare the effects on their plane tickets' price in relation to flight departure. (eFinland, 2004 g.) A Finnish travel agency Finnmatkat, of TUI Nordic, has started using electronic tickets to speed up the booking process as well. As of the 26 August 2004, Finnmatkat's customers can print out booking confirmations and airlines tickets from the Internet. (eFinland, 2004 h.) As a result, in July 2004, every third Finnmatkat customer booked their holiday over the Internet. (eFinland, 2004 i.)

6.2 Banking

Instead of queuing in a bank hall, consumers will be able to consult their bank accounts from their mobile handsets; obviously, mobile phones will not deliver cash to consumers, but it will fulfill the same functions as an ATM would. In addition to regular banking operations, an employer will be able to transfer his or her employees' salaries from the corporate account to their banks. The primary benefit for consumers lies in the ability of being able to bank anytime and anywhere. Hyun Jun Yong, director of LG TeleCom's mobile banking unit, said, "The services have a huge potential to revolutionize the use of money. This will be a stepping stone to a cashless society" (Lhlwan Moon, 2004).

6.3 Gaming

Just as SMS contributed to the growth of the mobile sector (Arno Wirzenius, 2001), mobile games account for a large part of the 3G's growth. There are over 65 million mobile games players across the world and more every day. According to telecom researcher Strategy Analytics Inc. mobile phone operators will earn as much as $1.44 billion in 2004 for sales of mobile games; this figure represents an increase by 88 % compare to 2003. There are many interactive games that can be played by two or more people simultaneously over the airwaves. Companies adapted for mobile phones six top-selling Xbox titles developed by Microsoft Game Studios. Consumers will ultimately be able to download or play online games from their mobile phones anytime and anywhere. Nitesh Patel, senior analyst at Strategy Analytics, has predicted that mobile game sales will amount to $3.7 billion by 2007. (Reinhardt Andy, 2004, 26)

6.4 M-payment

"Consumers do not need to reach out for their wallets anymore" (Lhlwan Moon, 2004, 64). There are two different existing technologies for mobile payment. Laser beam enabled handset and dual-chip technology. Latest mobile phones are equipped with an infrared beam that sends the consumers' credit card information straight to the card company. Therefore, users only need to point their cell phones to a terminal next to the store's cash register or the

ticket machine in the subway, for instance. Then, the given mobile phone asks for a personal ID number in order to close the purchase. In Finland, mobile phone manufacturer Nokia, Finnish bank Nordea and Visa International announced that they have opted for the dual-chip phones. The companies will pilot a jointly developed m-commerce system that is the first mobile payment platform based on dual-chip technology. The system is called the Electronic Mobile Payment Services (EMPS) and will be tested in Helsinki and surrounding areas of the capital. (McDonough Brian, 2001). Consumers will be able to insert a credit card ship in to a dual-chip phone and debit money from a prepaid or bank account via their mobile phones (Taaffe Joanne, 2001). As stated Park Sang Eon, a marketing manager, “It’s great to be able to walk into restaurants and shops without worrying about leaving your wallet behind.” (Ihlwan Moon, 2004, 64)

6.5 Location based services

The most radical change in the rise of mobile handsets is that it can be tracked by the networks. Satellite systems can pinpoint the location of today’s phones to within a few hundred meters. This technological improvement has opened opportunities for subscribers to benefit from new kinds of services based in regards to where they are located. If a consumer get lost on the way to a theatre, the system will send information to the mobile phone and help the user to find its way; this system is also known as Global Positioning System (GPS). In addition, according to where the consumer might be located at a given time, the operator may forward information about local happenings and promotions.
(Crockett Roger, 2004, 63-64)

6.6 Security

Even though “the requirements for protecting m-commerce transactions are similar to those for protecting fixed-line transactions” (BBC News, 2000) consumers are more reluctant when the issue of security arises in mobile commerce. “Surveys have shown shoppers have the same security fears about mobile transactions that were so prevalent in the early days of wired Internet commerce.” (McDonough Brian, 2001)

Companies such as Ericsson have taken steps forward to solve this issue. The company stated that its new mobile commerce platform has evolved due to efforts made jointly with Hewlett-Packard; “the platform incorporates m-commerce security and payment functions, enabling micro- and session-based payments from fixed and mobile devices.” As a result, Internet services such as banking, trading, ticketing, shopping, gaming and betting will be accessible from any type of fixed or mobile Internet enabled devices. (Wrolstad Jay, 2001).

Credit card firm Visa International has also announced that it will implement new security specification. The company’s new product is called “Mobile 3-D Secure” that is specially designed for mobile commerce payments; it will allow issuers of Visa credit card to validate cardholders’ identity in real-time and lets issuers encrypt payment and account information that will be sent over open networks and airwaves. As stated Rick Darnaby, Senior Vice President & General Manager of Europe, Middle East and Africa for Motorola’s Personal Communications, “Trust is the key element for mobile interaction and transaction.” (McDonough Brian, 2001 b.)

7 METHODOLOGY

This section will provide readers with the process of data collection and analysis conducted to attain the research objectives set out earlier. Having obtained the background information in my literature review, I set out to select the target population and design the questionnaire for the survey. Two methods of data collection were employed:

- Survey
    - Experiments were conducted with the help of pilots surveys

- Secondary data analysis
    - Members of the local community (mobile phones retailers)
    - Kajaani town hall (demographic purposes)

7.1 Target population and sample selection

Because different consumers have different needs and wants, there are only few products or services that are purchased by everybody. Needs and wants may differ accordingly to a given segment. To better suit needs and wants of each group, they shall be treated differently (Blythe Jim, 2001). The targeted population consisted of people who owned a mobile phone. Respondents should also be Internet users in order to get a better insight of their needs and concerns; since m-commerce and e-commerce are intimately related, the success or failure of one will automatically affect the other.

In accordance with the demographic situation of the city of Kajaani, the research survey was conducted on a higher number of female respondents; in the chosen segments, Kajaani's female population accounts for a higher number than their male counterparts. The stratified sampling technique has been used, which allowed the researcher to cope with the difference in gender; it classifies the population into at least two strata then draws a sample from each (Mc Daniel & Gates, 2001). The coding process involved the subdivision of the population into 6 categories of age; ranging from the age of 20 to 49 years old. Questionnaires were distributed in relation with the respondents' gender and age in order to avoid the coverage error. The research survey involves a face-to-face interaction with potential respondents, which allowed the researcher to avoid the nonresponse error (Berenson L., Mark & Levine M., David 1999).

7.2 Questionnaire design

The survey questions were formulated based on the research objectives set forth earlier. The most relevant questions in terms of consumers' feelings use a Likert scale; a scale that shows a series of attitudes towards an object, which are given numerical values ranging from favorable to unfavorable in order to define in accurate manner respondents' feelings (Mc Daniels & Gates 2001). Other questions required respondents to tick one or more of the choices. Appendix 1 provides a deeper explanation of the questionnaire design as well as a copy of the questionnaire.

7.3 Pilot

A survey pilot was designed and tested to aid in assessing the suitability of the questions and measurement scales; the pilot survey has been conducted on a pool of 20 people who have been randomly selected in the city of Kajaani.

8 RESEARCH FINDINGS

The main objective of this section is to:

- Determine which age group has the highest level of Internet and mobile phone usage in terms of purchasing
- Gauge what are the consumers' expectations and concerns in relation to m-commerce
- Consumers' awareness of m-commerce
- Who among the different categories of age is the most inclined to adopt m-commerce?

Readers must bear in mind that the survey has been conducted in the city of Kajaani explicitly. In addition, in-depth respondents' responses to the questionnaire may be found in the appendix 2 in the form of SPSS outputs.

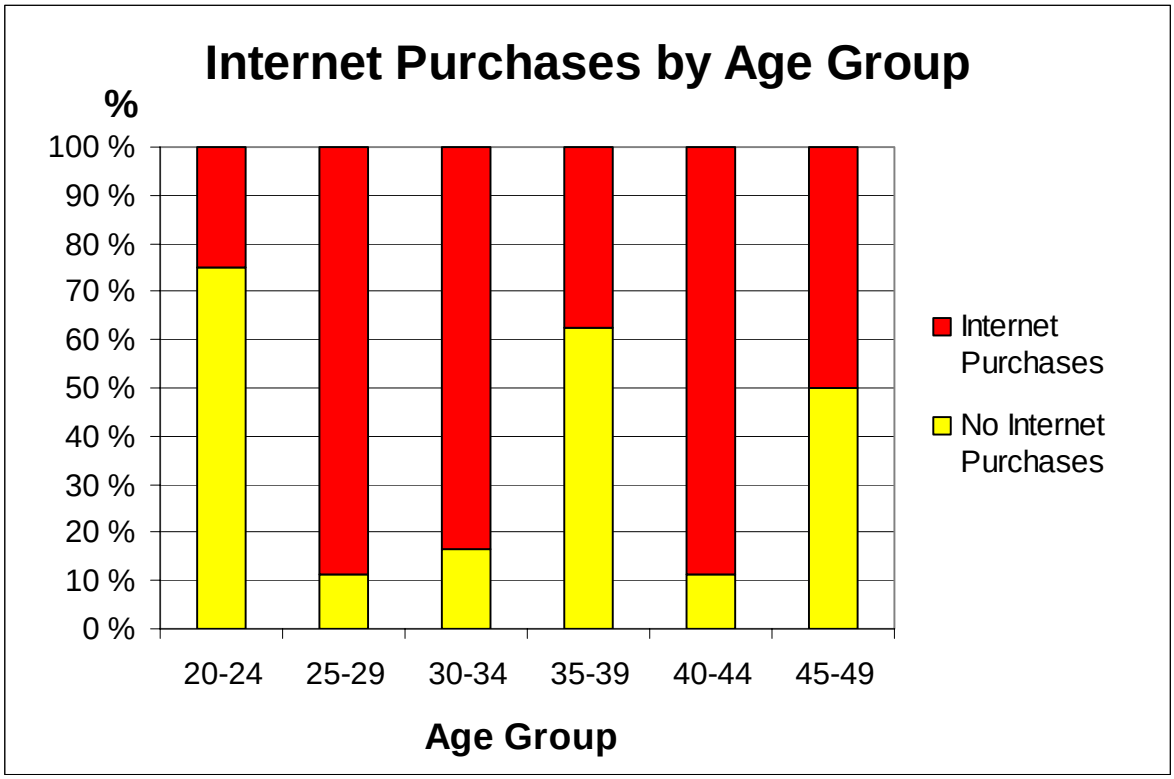

Fig. 6 Internet Purchases by Age Group

People living in the city of Kajaani reflect national trends in terms of growth in Internet purchasing. In addition, it should be noticed that, in contrast with national standards, people who belong to the 25-29 and 40-44 segments are equally involved in the Internet purchasing; both categories are also closely followed by the 30-34 segment.

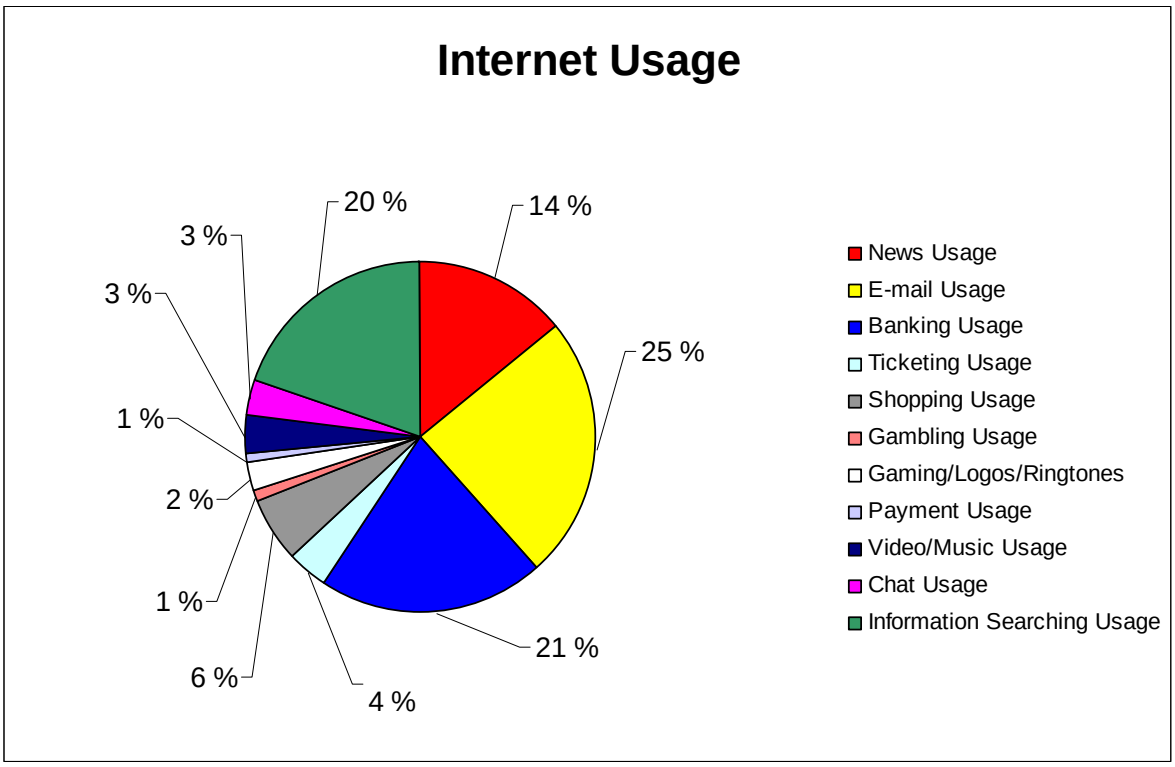

Fig. 7 Internet Usage

As the above figure demonstrated, features such as e-mail, banking and news are the most widely used by respondents while browsing the fixed Internet.

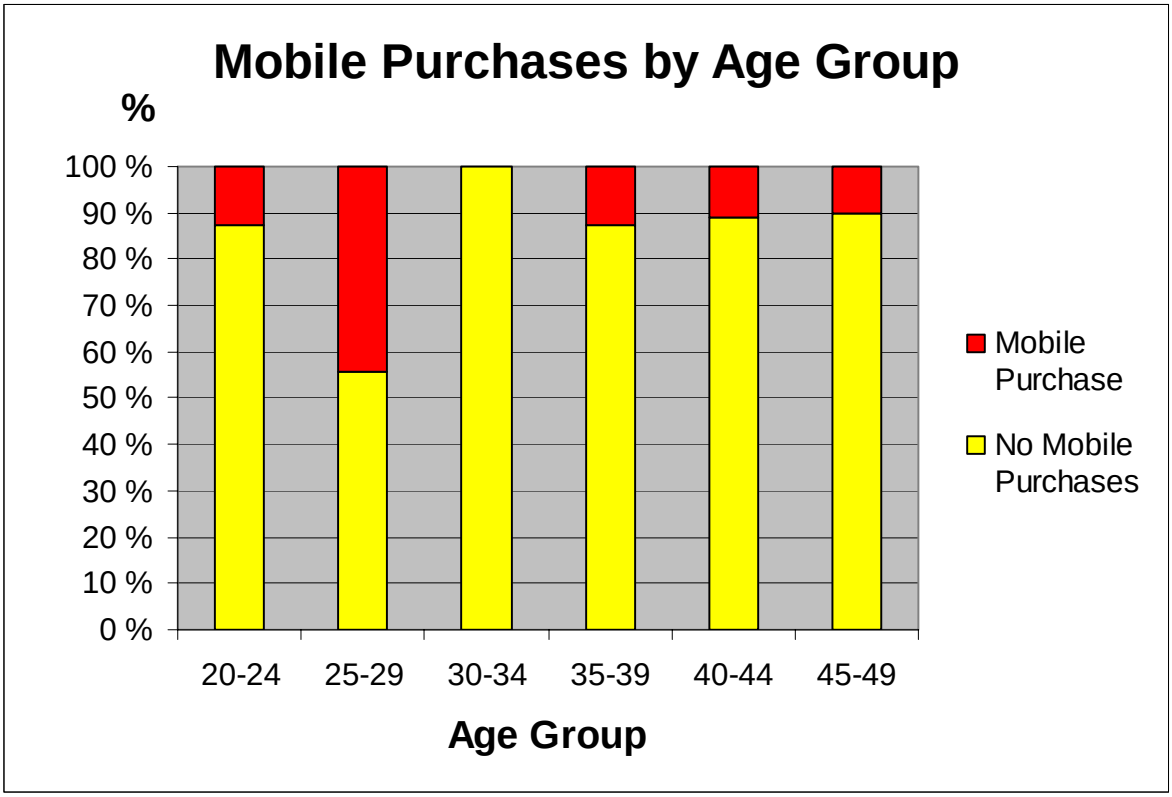

Fig. 8 Mobile Purchases by Age Group

Those who belong to the 25-29 segment are the people who have experienced the most purchases using their mobile phones; in contrast, people in the 30-34 segment seem to fully reject such buying process.

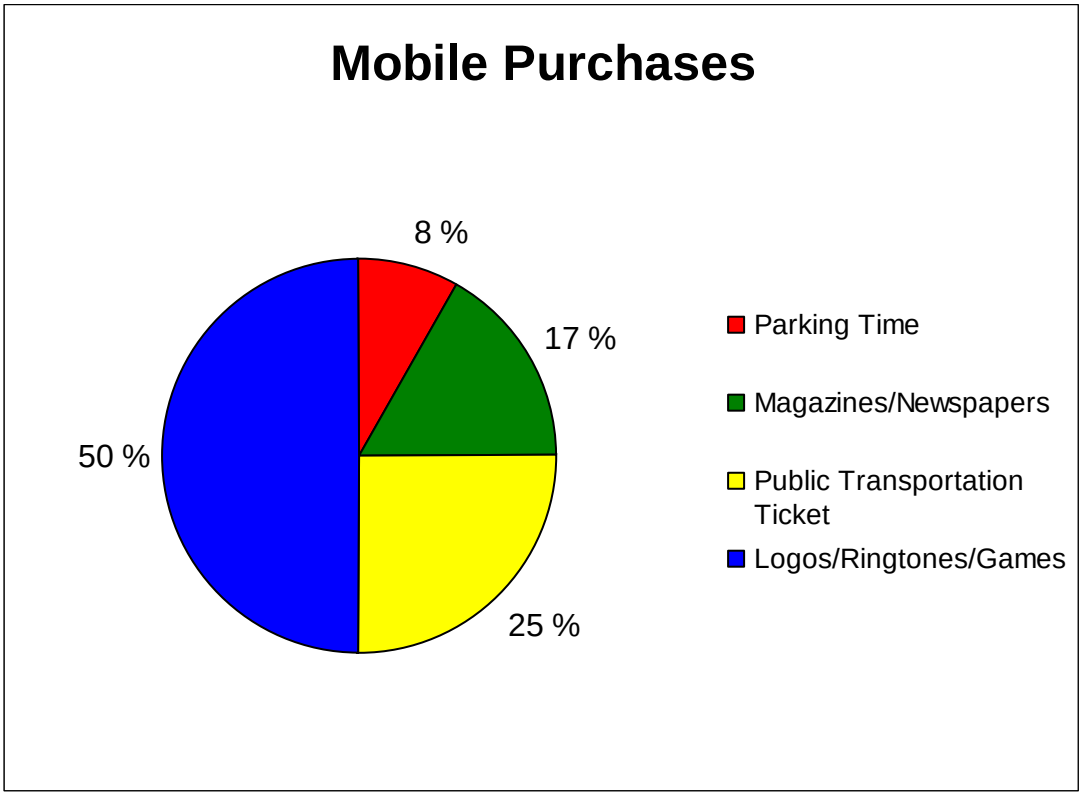

Fig. 9 Mobile Purchases

As the above figure demonstrated, prior to m-commerce, people have mainly used their mobile phone to purchase logos, ring tones and games.

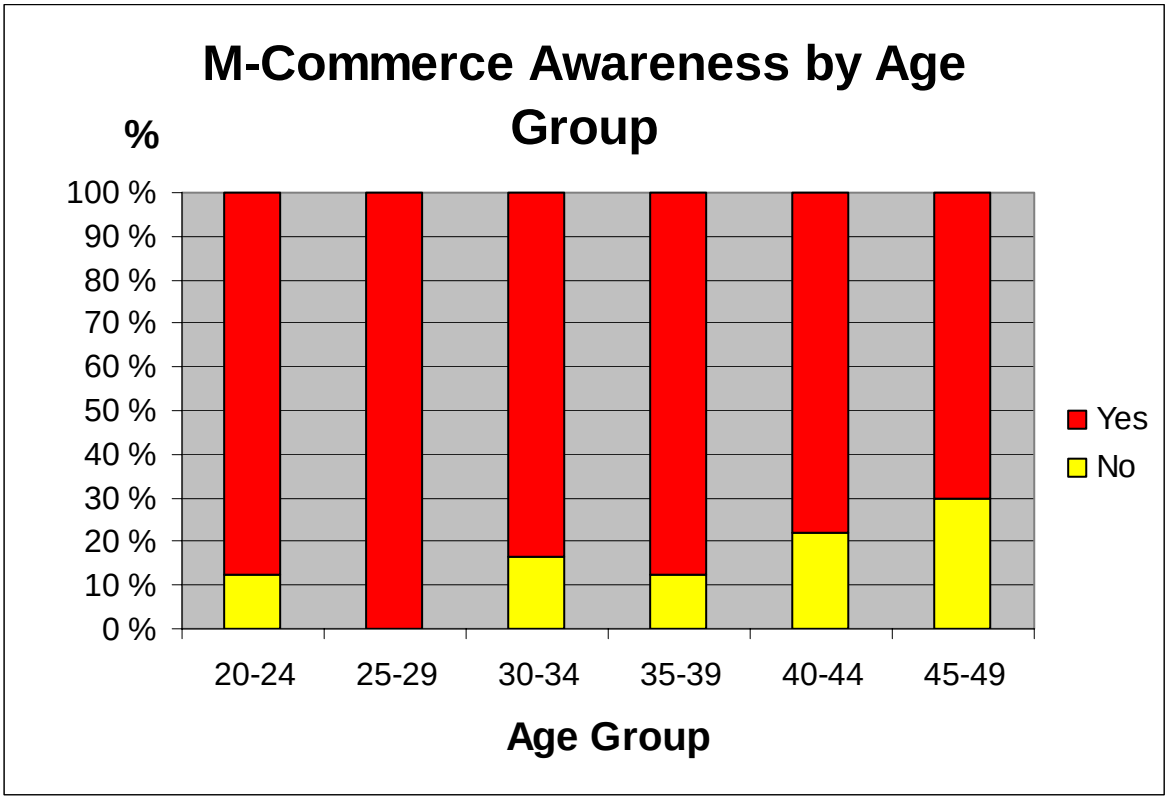

Fig. 10 M-Commerce Awareness by Age Group

As the above figure demonstrated, most of the respondents are well aware of the improvements in the mobile sector; however, people who belong to the 25-29 segment are those who knew most about m-commerce advances. In addition, the results also show that people's awareness tend to decrease as they get older.

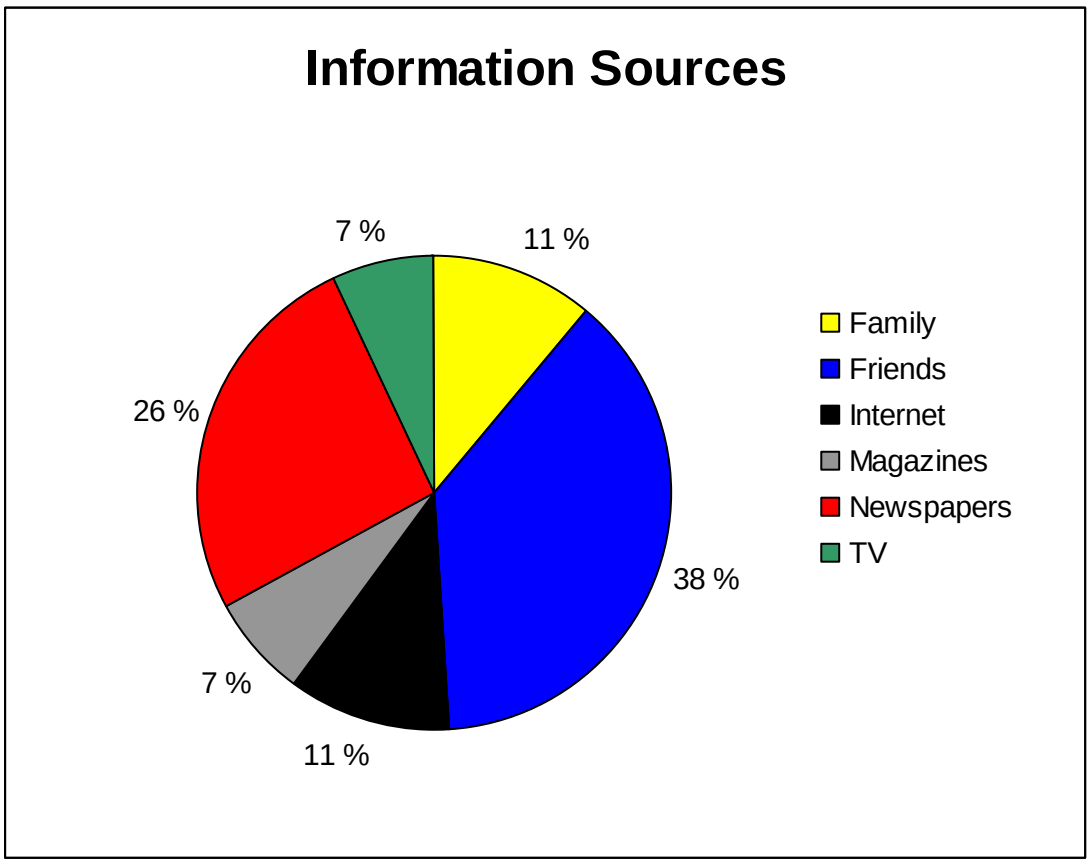

Fig. 11 Information Sources

When asked how respondents have heard of m-commerce, the majority of people answered that their friends were used as a reference.

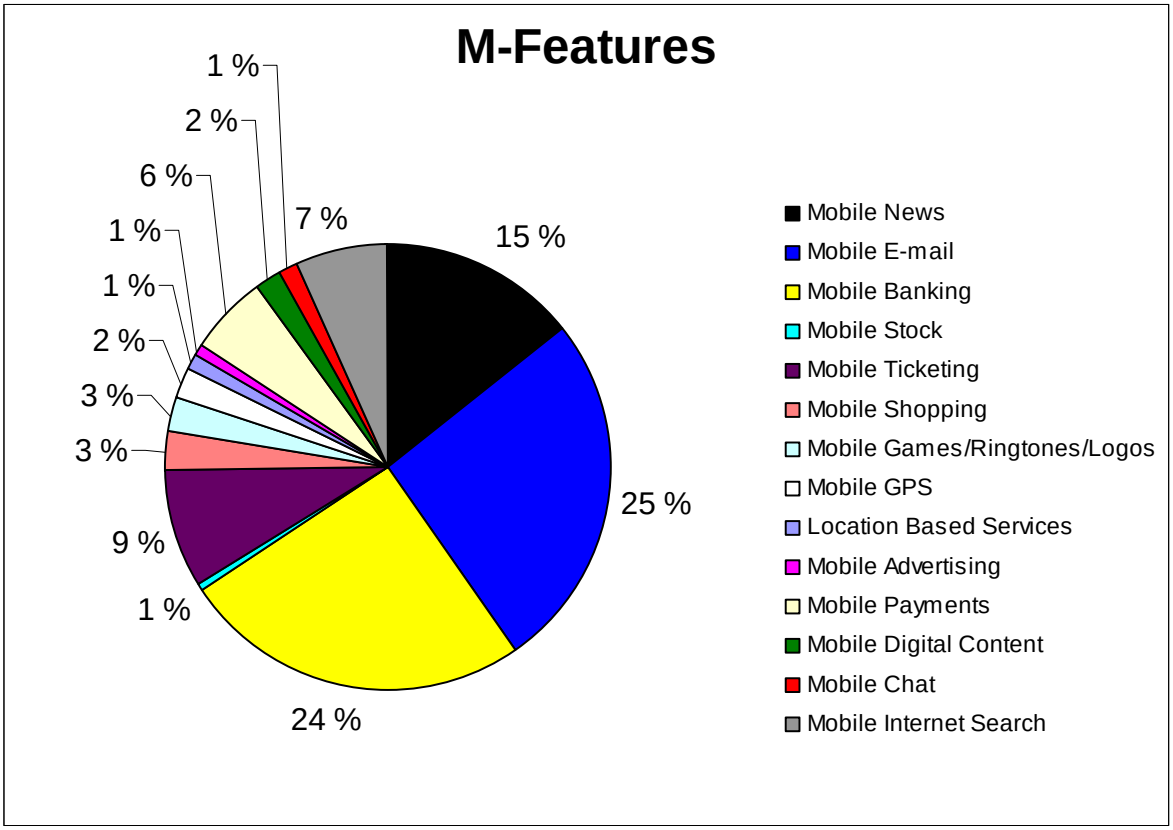

Fig. 12 M-Features

The above features are those that are most appealing to respondents in the city of Kajaani. Mobile e-mail, mobile banking, mobile news and mobile ticketing are features that would affect positively consumers' adoption process; readers must bear in mind that these features were already widely used by respondents in the fixed Internet.

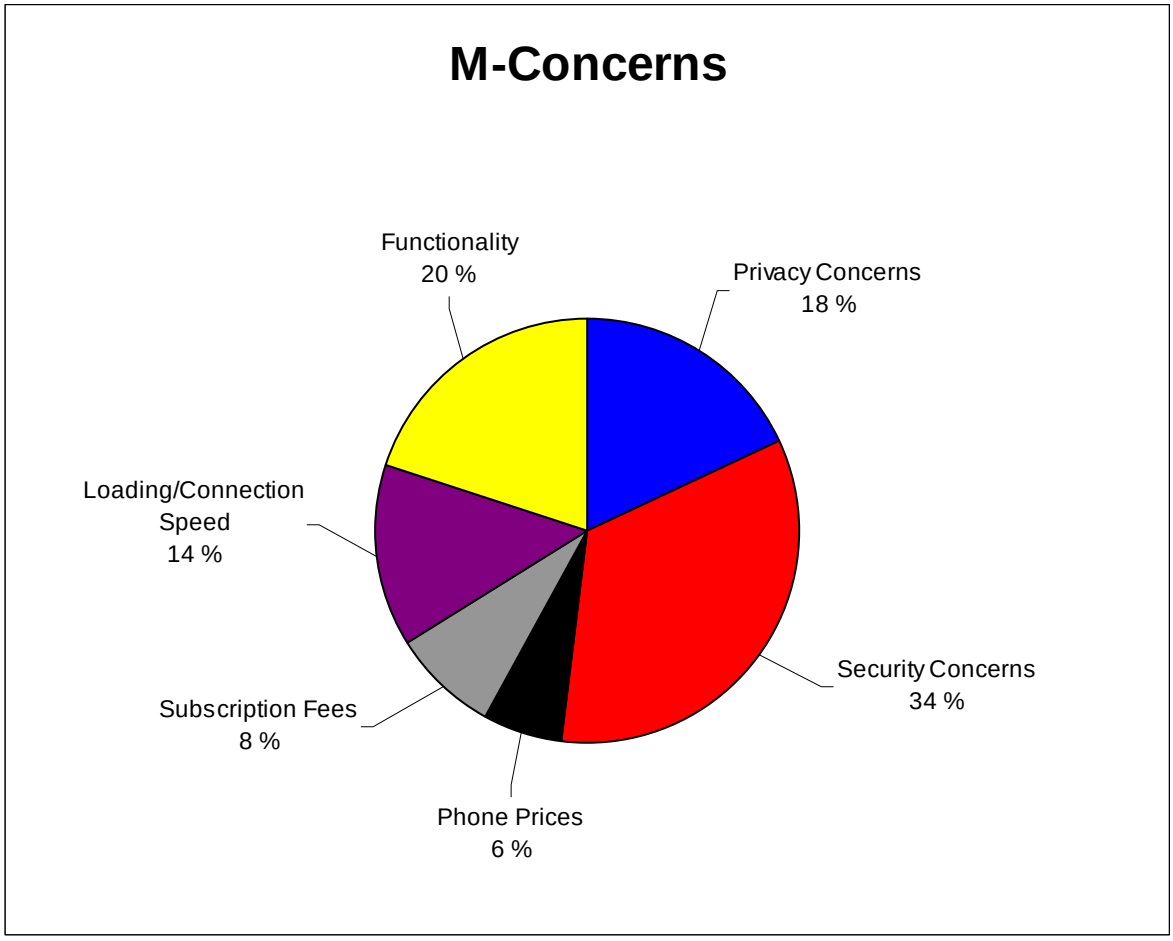

Fig. 13 M-Concerns

Conventional wisdom says that the price of handsets and subscriptions would be counted among the top consumers' priorities. However, the survey has demonstrated that respondents overwhelmingly perceived security as being the main issue in mobile commerce.

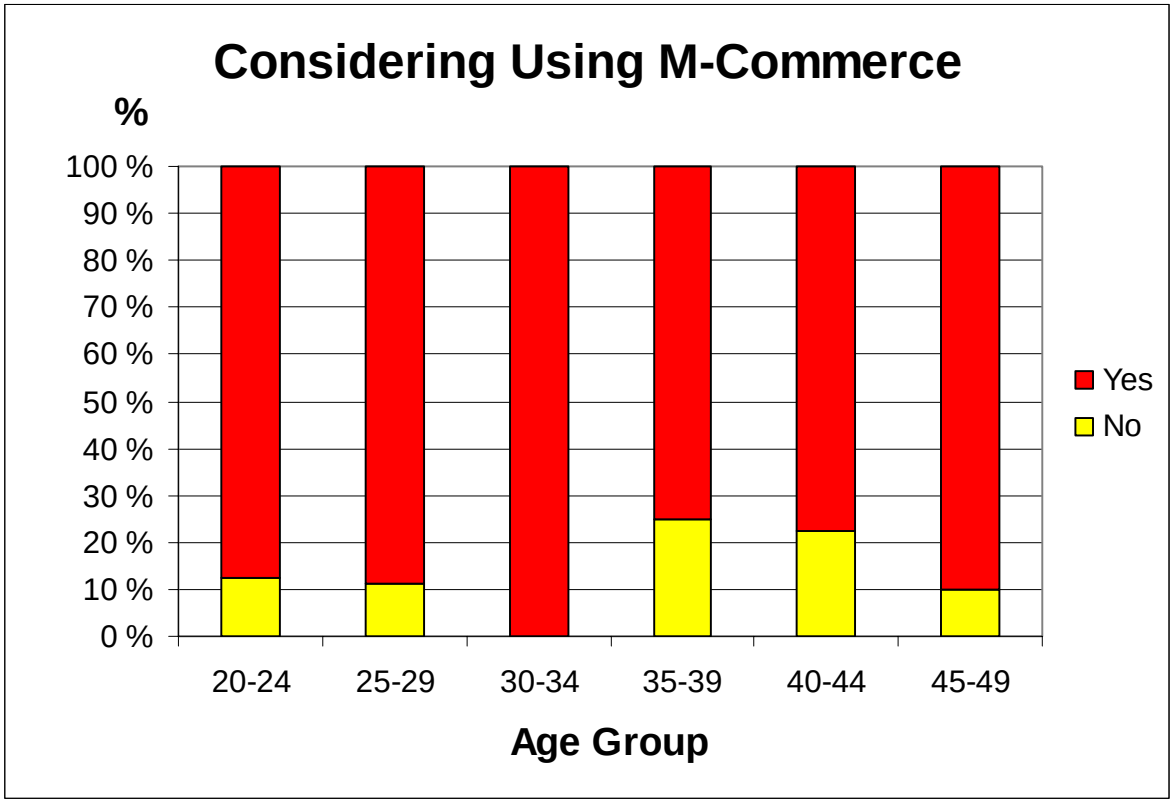

Fig. 14 Considering Using M-Commerce

People who belong to the 25-29 segment are the ones who have the highest level of Internet and mobile phone purchasing and the highest degree of awareness in relation to m-commerce, however, those who belong to the 30-34 segment are the one who seem to be the most inclined in terms of adopting m-commerce.

“Rational motives are based on reasoning, or logical assessment of the consumer’s situation” (Blythe Jim, 1997). Respondents may have worked out a need for a mobile phone that will allow them to have access to these particular features, and will base their choice on that given need. In this case, results of the survey showed that the top three features are e-mail, banking and news.

There are several categories in which consumers fall. Everett Rogers has classified consumers as innovators, who represent 2.5 % of the population, the early adopters, who account for 13.5 %, the early majority amounts to 34 %, the late majority who makes up 34

% and, finally, the laggards consist of 16 % (Blythe Jim, 1997). Due to Finland particular mobile phone culture, the classification in terms of percentages is not applicable to Finnish consumers, in this precise case. In the city of Kajaani, the people who belong to the 30-34 segment can be referred to as the innovators, people who belong to the 25-29 and 45-49 as early adopters, people who belong to the 20-24 segment can be identified as the early majority, people who belong to the 40-44 segment are the late majority and finally those who are among the 35-39 segment as “laggards”.

9 CONCLUSION

According to the survey's findings, there is an irrefutable demand for the mobile commerce; over 85 % of respondents are considering using m-commerce within the next 6 to 12 months. The assumption resting on the theory that by aiming at increasing consumers' awareness and minimizing risks and uncertainties will inexorably lead to the consumers' adoption of a newer technology can only be partially held in the case of m-commerce in the city of Kajaani. Greater attention should be given to the people's level of drive. The survey demonstrated that people who belong to the 30-34 segment seem to have a higher drive in terms of adopting m-commerce than the other groups of age. As Blythe Jim stated (1997), "The drive is the force that makes a person responds to a need." In spite of the 30-34 segment's lack of experience in terms of purchasing items using their mobile phones, people belonging to this segment seem to have the necessary level of drive to go though the adoption process. In other words, these people are willing to adopt m-commerce as it is proposed today because the prospects of using it outweigh the risks and uncertainties that conventional consumers may have while considering the adoption of a given service. The optimum stimulation level is subjective and may vary from one individual to another, and it seems that people belonging to that specific segment have used the Internet to carry out purchases and were simply waiting for the adequate technology to be launched. Improvements made towards the mobile phone sector can be seen as determinant factors for consumers in terms of using m-commerce. As set forth in the literature review, WAP applications and performances were rather poor; therefore, consumers did not feel inclined to use the technology. The underlying reason for such belief lies in the fact that consumers accepted a certain degree of technological imperfections in relation to Internet computer based because of its low cost profile. On the other hand, mobile phone users' expectations

are inversely proportional towards Internet enabled mobile phones; they are accustomed to paying large subscription fees, and in return expect a higher level of service and reliability (Craig Lord, 2004.)

In spite of an overwhelming acceptance of m-commerce, a majority of respondents attached a high degree of risks and uncertainties in relation to m-commerce. The most important of these seems to be related to the issues of security, privacy and functionality. The experience with fixed e-commerce did not seem to significantly alter the effects of these deterrents. The author recommends that mobile phone operators and manufacturers address these issues to facilitate the adoption of m-commerce. However, the latter should have the priority in the short-term because they seem to be uppermost in consumers' mind. Security has always been a barrier in the fixed and wireless commerce; consumers fear breaches in the security system that would lead to financial burdens. Consumers perceive services as being more risky and uncertain in comparison with products. As set forth in the literature review, the reasons for such apprehensions lie mainly in the intangible nature of the service. Therefore, operators and manufacturers shall increase the promotion of newer and safer security systems in order to ensure a growth in consumers' trust. Ultimately all the issues shall be addressed in order to meet consumers' satisfaction and attract a broader customer base in the city of Kajaani.

With regards to factors that respondents felt were important for the success of m-commerce, e-mail, banking, news and ticketing stood out; as previously mentioned, these features were among those that are performed in a regular basis by users and fit in easily with what consumers are already accustomed to. Since not all services can be rolled-out simultaneously due to high costs in network deployment, the author suggests that mobile operators first concentrate on those services that have the highest consumer demand. However, mobile phone operators and manufacturers should not limit or diminish m-commerce features based on these findings. Innovations play a major part in products and services development since consumers' needs and wants are constantly evolving. As Nokia's Vice President of Business Development, Heikki Norta, stated: "When you buy your first car, it is likely to be a basic model, but as you become more knowledgeable as a buyer and loyal to the brand of car you prefer, you will want your second, third and fourth cars to be much, much better. It's the same with mobile phones, which is the world's largest consumer electronics industry. Mobiles are more akin to wristwatches than computers

because a typical owner may want to have a choice of several to suit their mood and needs at the time.”

10 LIMITATIONS

The major obstacles were the language barrier, time and manpower constraints; partly because of the two latter my survey had to be conducted on a respondent pool of 50 people. Due to the very nature of the subject, changes in the industry might have taken place between the time of the submission of the thesis and its edition. It is inevitable in such high-paced and ever changing market. Nevertheless, all the efforts have been made in order to deliver information that is as accurate as possible.

11 RECOMMENDATIONS FOR FUTURE RESEARCH

Finland's government has granted licenses to network operators; operators' major expenses laid in network deployment costs. In addition, within few months, other operators such as Elisa and Suomen 3G should follow TeliaSonera's foot steps, which in turn will lead to an intense competition among operators. This raises the question of will the operators absorb the costs of networks upgrading or pass them on to consumers?

M-commerce and 3G technologies are intimately related to each other. Worldwide studies have shown that older people fail to exploit mobile phone technologies to the fullest extent. Games, MMS, MP3 and the likes tend to attract a younger audience; however, if these features increase the phones or subscriptions' prices, greater are the chances that the given younger audience will not be able to afford them. "Whereas other trendy new mobile services such as multimedia e-mail, video clips, and music downloads appeal largely to the young, banking is most popular among people in their 30s and 40s" (Lhlwan Moon, 2004).

It has been established that UMTS networks handle both voice and data more efficiently than current networks, reducing the cost to provide mobile service by as much as 80 %. According to Kendall, Strategy Analytics, "operators will be able to sell voice for less and still make more money from it." (Reinhardt, Capell, Ewing & Bureau Reports, 2004, 19) TeliaSonera has decided to fragment its Finnish network in accordance with demographic standards. The fragmentation will irremediably affect Sonera's service offering in relation to m-commerce.

The research focuses of the business to consumer aspect of m-commerce. However, the business to business sector shall not be neglected since it plays a major role in the fixed Internet dimension. In a near future, it is likely that business to business transactions will increase in the mobile sector. In addition, apart from the transactional aspects of m-commerce, it is also likely that it will redefine the way interaction takes place between a company and its employees. (Samtani, Leow, Lim & Goh, 2003)

As of today, M-commerce is still in its infancy stage in Finland. The author suggests that further research could be carried out in all the above mentioned areas.

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Appendix 1

The first part of the questionnaire contains the screening questions such as gender, age and mobile phone ownership. The second part studies the Internet usage of the respondents as well as determines consumers' opinion on particular issues related to Internet. The following part aims at examining wireless handsets usage. The forth part seeks to briefly determine the level of consumers' awareness of m-commerce. The following part examines which m-commerce services are appealing to consumers; respondents are asked to tick a list of services according to their willingness to use them. The forth part addresses the potential concerns respondents have in relation to m-commerce; respondents are asked to rate each of these according to their own perceptions. The last part seeks to determine consumers' willingness to adopt it; all these questions aim at establishing a link between respondents' mobile phone and Internet usage to m-commerce. Next are copies of the questionnaires.

Gregory Berard
BBA student
Final Year Project's Survey
2004

Kajaanin ammattikorkeakoulu

Mobile Commerce Survey

Mobile Commerce or "M-commerce" is comparable to the "E-commerce", except that the Internet is accessed through mobile telecommunication networks. In other words, what was once only possible with computers is readily available wirelessly with the help of mobile phones.

1. Do you have a mobile phone?	**Yes** ☐	**No** ☐
2. Do you live in Kajaani?	**Yes** ☐	**No** ☐
3. Are you?	**Male** ☐	**Female** ☐
4. How old are you?	**____ Years**	
5. What is your position?		**Employer** ☐ **Employee** ☐ **Unemployed** ☐ **Student** ☐ **Retired** ☐ **Other** _____
6. How often do you use the Internet?		**Never** ☐ **Monthly** ☐ **Weekly** ☐ **Daily** ☐
7. Which of the following tasks do you perform on a regular basis on the Internet?		**News** ☐ **E-mail** ☐ **Banking** ☐ **Stock trading** ☐ **Ticketing (plane tickets, hotels…)** ☐ **Shopping** ☐ **Gambling** ☐ **Gaming, ring tones, logos** ☐ **On-line payments** ☐ **Digital products (e-books, videos, music…)** ☐ **Chat** ☐ **Search the Web** ☐
8. Have you ever bought something over the Internet with your computer (e.g. Plane tickets, books etc…)?	**Yes** ☐ **(skip to question 10)**	**No** ☐

9. Why not?		**Concern about privacy** ☐ **Concern about security (payments…)** ☐ **Trust issues between you and sellers** ☐ **Prefer face-to-face interactions** ☐ **Don't know how to do it** ☐
10. Did you make a purchase with your mobile phone?	**Yes** ☐	**No** ☐ **(skip to question 12)**
11. What?	**Parking ticket** ☐ **Cinema tickets** ☐ **Vending machines** ☐ **Newspapers or Magazines** ☐	**Public transportation** ☐ **Logos/ringtones/games** ☐ **Other_____**
12. Are you aware of the improvements that have been made towards M-commerce (connection speed, Internet browsing etc…)?	**Yes** ☐	**No** ☐
13. How have you heard about it?		**TV** ☐ **Newspapers** ☐ **Magazines** ☐ **Internet** ☐ **Friends** ☐ **Family** ☐
14. The listed features belong to M-commerce. Please select <u>3</u> that you would consider using:		**News** ☐ **E-mail** ☐ **Banking** ☐ **Stock trading** ☐ **Ticketing (plane tickets, hotels…)** ☐ **Shopping** ☐ **Gambling** ☐ **Gaming, ring tones, logos** ☐ **Location findings (GPS)** ☐ **Location based services (promotions nearby)** ☐ **Mobile advertising** ☐ **Mobile payments** ☐ **Digital products (e-books, videos, music)** ☐ **Chat** ☐ **Web search** ☐

14. If you were to use M-commerce, what would be your main concerns?

	1	2	3	4	5
Privacy	☐	☐	☐	☐	☐
Security	☐	☐	☐	☐	☐
High cell phones' prices	☐	☐	☐	☐	☐
High subscription fees	☐	☐	☐	☐	☐
Loading / Connection speed	☐	☐	☐	☐	☐
Functionality	☐	☐	☐	☐	☐
Screen Limitation	☐	☐	☐	☐	☐

(1 = very important / 5 = not important)

15. Would you consider trying M-commerce in a near future (6 months - 12 months)?

Yes ☐

No ☐ ***Why not?***

Don't need it ☐
Prefer computers ☐
Too many concerns (price…) ☐
Wait and see ☐
Not enough information about it ☐
No particular reason ☐

Name (confidential): _____

Thank you very much for your time!!!

Gregory Berard
BBA student
Final Year Project's Survey
2004

Kajaanin ammattikorkeakoulu

Mobilipalvelu-tutkimus

Mobiilipalvelut ovat verrattavissa sähköisiin palveluihin, paitsi ne toimivat matkapuhelinverkoissa. Toisin sanoen, mikä oli mahdollista vain tietokoneella ja Internetyhteydellä on nyt mahdollista tehdä langattomasti matkapuhelimella.

1. Onko Teillä matkapuhelinta?	**Kyllä** ☐	**Ei** ☐
2. Asutteko Kajaanissa?	**Kyllä** ☐	**Ei** ☐
3. Sukupuoli?	**Mies** ☐	**Nainen** ☐
4. Ikänne?	**_____ vuotta**	
5. Mikä on asemanne?		**Työnantaja** ☐ **Työntekijä** ☐ **Työtön** ☐ **Opiskelija** ☐ **Eläkkeellä** ☐ **Muu _____**
6. Kuinka usein käytätte Internetiä?		**En koskaan** ☐ **Kuukausittain** ☐ **Viikottain** ☐ **Päivittäin** ☐
7. Mitä seuraavista toiminnoista käytätte jatkuvasti Internetissä?		**Uutiset** ☐ **E-mail** ☐ **Pankki** ☐ **Osakekauppa** ☐ **Lippuvaraus (lentoliput, hotellit…)** ☐ **Ostaminen** ☐ **Vedonlyönti ja pelaaminen** ☐ **Pelaaminen, soittoäänet, logot** ☐ **Ostosten maksaminen** ☐ **Digitaaliset palvelut (videot, musiikki)** ☐ **Chat** ☐ **Tiedonhaku** ☐
8. Oletteko koskaan ostanut mitään tietokoneella Internetin välityksellä (lentolippuja, kirjoja jne.)?	**Kyllä** ☐ **(siirry kysymykseen 10)**	**Ei** ☐
9. Miksi ette?		**Yksityisyyskysymykset** ☐ **Huoli turvallisuudesta (maksut…)** ☐ **Luottamuskysymykset** ☐ **Henkilökohtaisen palvelun puute** ☐ **En tiedä miten** ☐

10. Oletteko ostanut mitään käyttäen matkapuhelinta?	**Kyllä** ☐	**Ei** ☐ **(siirry kysymykseen 12**
11. Mitä?	**Parkkiaikaa** ☐ **Elokuvalippuja** ☐ **Karkkiautomaatista** ☐ **Sanoma- tai aikakauslehtiä** ☐	**Joukkoliikennelippu** ☐ **Logo/soittoääni/pelit** ☐ **Muu**_____
12. Oletteko tietoinen mobiili-palveluiden kehityksestä (yhteysnopeus, Internetin selaaminen…)?	**,Kyllä** ☐	**Ei** ☐
13. Kuinka olette kuullut siitä?		**TV** ☐ **Sanomalehdet** ☐ **Aikakauslehdet** ☐ **Internet** ☐ **Ystävät** ☐ **Sukulaiset** ☐
14. Seuraavat ominaisuudet kuuluvat mobiilikauppaan. Valitkaa Teille 3 tärkeintä, joita käyttäisitte?		**Uutiset** ☐ **E-mail** ☐ **Pankki** ☐ **Osakekauppa** ☐ **Lippuvaraus (lentoliput, hotellit…)** ☐ **Ostaminen** ☐ **Vedonlyönti ja pelaaminen** ☐ **Pelaaminen, soittoäänet, logot** ☐ **Paikannuspalvelut (GPS)** ☐ **Paikallispalvelut (tapahtumat ym.)** ☐ **Mobiilimainonta** ☐ **Ostosten maksaminen** ☐ **Digitaaliset palvelut (videot, musiikki)** ☐ **Chat** ☐ **Tiedonhaku** ☐

14. Jos käyttäisitte mobilipalveluita, mitkä olisivat huolenaiheenne?	**1**	**2**	**3**	**4**	**5**
Yksityisyys	☐	☐	☐	☐	☐
Turvallisuus	☐	☐	☐	☐	☐
Puhelimen hinta	☐	☐	☐	☐	☐

Liittymän maksut	☐	☐	☐	☐	☐
Yhteyden nopeus	☐	☐	☐	☐	☐
Helppokäyttöisyys	☐	☐	☐	☐	☐

(1 = erittäin tärkeä / 5 = ei tärkeä)

15. Voisitteko harkita kokeilevanne mobiilipalveluiden käyttämistä lähitulevaisuudessa (6 - 12 kk)?

Kyllä ☐

Ei ☐ **Miksi?**

En tarvitse
Pidän tietokonetta parempana
Liian paljon huomioitavaa (liian kallis…)
Odotan ja katson
Ei ole tarpeeksi tietoa saatavilla
Ei erityistä syytä

Nimi (luottamuksellinen): _____

Kiitos paljon ajastanne!!!

Multiple Response

Group $Interne
(Value tabulated = 1)

Dichotomy label	Name	Count	Pct of Responses	Pct of Cases
News Usage	newsuse	29	14.3	58.0
E-mail Usage	email	49	24.1	98.0
Banking Usage	banking	42	20.7	84.0
Ticketing Usage	ticketin	8	3.9	16.0
Shopping Usage	Shopping	12	5.9	24.0
Gambling Usage	Gambling	2	1.0	4.0
Gaming/Logos/Ringtones Usage	Gaming	5	2.5	10.0
Payment Usage	payments	2	1.0	4.0
Video/Music Usage	Videomus	7	3.4	14.0
Chat Usage	Chat	7	3.4	14.0
Information Searching Usage	search	40	19.7	80.0
	Total responses	203	100.0	406.0

0 missing cases; 50 valid cases

Abbreviated Name	Extended Name
$Interne	$InternetFeatures
ticketin	ticketing
Videomus	Videomusic

Multiple Response

Group $Interne InternetConcerns
     (Value tabulated = 1)

Dichotomy label	Name	Count	Pct of Responses	Pct of Cases
Privacy Concerns	Privacy	1	4.8	5.3
Security Concerns	Security	13	61.9	68.4
Trust Issues	Trust	4	19.0	21.1
Lack of Interaction	Ineracti	3	14.3	15.8
		-------	-----	-----
	Total responses	21	100.0	110.5

31 missing cases; 19 valid cases

Abbreviated Name	Extended Name
$Interne	$InternetConcerns
Ineracti	Ineraction

Multiple Response

Group $MobileP MobilePurchase
     (Value tabulated = 1)

Dichotomy label	Name	Count	Pct of Responses	Pct of Cases
Parking Time	Parking	1	8.3	12.5
Magazines/Newspapers	Magazine	2	16.7	25.0
Public transportation Ticket	Bus	3	25.0	37.5
Gaming/Logos/Ringtones	Logo	6	50.0	75.0
		---	---	---
	Total responses	12	100.0	150.0

42 missing cases; 8 valid cases

Abbreviated Name	Extended Name
$MobileP	$MobilePurchase
Magazine	Magazinenewspapers

Multiple Response

Group $MFeatur MFeatures
     (Value tabulated = 1)

Dichotomy label	Name	Count	Pct of Responses	Pct of Cases
Mobile News	News2	22	14.6	44.0
Mobile E-mail	email2	39	25.8	78.0
Mobile Banking	Banking2	38	25.2	76.0
Mobile Stock	Stock2	1	.7	2.0
Mobile Ticketing	Ticketin	13	8.6	26.0
Mobile Shopping	Shoppi_1	4	2.6	8.0
Mobile Games/Ringtones/Logos	Gaming2	4	2.6	8.0
Mobile GPS	GPS	3	2.0	6.0
Location Based Services	localser	2	1.3	4.0
Mobile Advertising	advertis	1	.7	2.0
Mobile Payments	Paymen_1	9	6.0	18.0
Mobile Digital Content	Digicont	3	2.0	6.0
Mobile Chat	Chat2	2	1.3	4.0
Mobile Internet Search	SearchIn	10	6.6	20.0
Total responses		151	100.0	302.0

0 missing cases; 50 valid cases

Abbreviated Name	Extended Name
$MFeatur	$MFeatures
advertis	advertising
Digicont	Digicontent
localser	localservices
Paymen_1	payments
SearchIn	SearchInt
Shoppi_1	Shopping
Ticketin	Ticketing2

Multiple Response

```
Group $MConcer  MConcerns
     (Value tabulated = 1)

                                                          Pct of  Pct of
Dichotomy label                          Name       Count  Responses  Cases

Mobile Privacy Concerns                  Privacy2      18     18.0     43.9
Mobile Security Concerns                 Securi_1      34     34.0     82.9
Mobile Phone Prices                      Price          6      6.0     14.6
Mobile Subscription Fees                 Subfees        8      8.0     19.5
Mobile Loading/Connection Speed          LoadSpee      14     14.0     34.1
Mobile Functionality                     Function      20     20.0     48.8
                                                    -------    -----    -----
                                 Total responses       100    100.0    243.9

9 missing cases;  41 valid cases

Abbreviated  Extended
Name         Name

$MConcer     $MConcerns
Function     Functionality
LoadSpee     LoadSpeed
Securi_1     Security
```

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Age Group * News Usage	50	100.0%	0	.0%	50	100.0%
Age Group * E-mail Usage	50	100.0%	0	.0%	50	100.0%
Age Group * Banking Usage	50	100.0%	0	.0%	50	100.0%
Age Group * Stock Trading Usage	50	100.0%	0	.0%	50	100.0%
Age Group * Ticketing Usage	50	100.0%	0	.0%	50	100.0%
Age Group * Shopping Usage	50	100.0%	0	.0%	50	100.0%
Age Group * Gambling Usage	50	100.0%	0	.0%	50	100.0%
Age Group * Gaming/Logos/Ringtones Usage	50	100.0%	0	.0%	50	100.0%
Age Group * Payment Usage	50	100.0%	0	.0%	50	100.0%
Age Group * Video/Music Usage	50	100.0%	0	.0%	50	100.0%
Age Group * Chat Usage	50	100.0%	0	.0%	50	100.0%
Age Group * Information Searching Usage	50	100.0%	0	.0%	50	100.0%

Age Group * News Usage Crosstabulation

			News Usage		
			No	Yes	Total
Age Group	20-24	Count	4	4	8
		% within Age Group	50.0%	50.0%	100.0%
	25-29	Count	4	5	9
		% within Age Group	44.4%	55.6%	100.0%
	30-34	Count	1	5	6
		% within Age Group	16.7%	83.3%	100.0%
	35-39	Count	5	3	8
		% within Age Group	62.5%	37.5%	100.0%
	40-44	Count	4	5	9
		% within Age Group	44.4%	55.6%	100.0%
	45-49	Count	3	7	10
		% within Age Group	30.0%	70.0%	100.0%
Total		Count	21	29	50
		% within Age Group	42.0%	58.0%	100.0%

Age Group * E-mail Usage Crosstabulation

			E-mail Usage		
			No	Yes	Total
Age Group	20-24	Count	0	8	8
		% within Age Group	.0%	100.0%	100.0%
	25-29	Count	0	9	9
		% within Age Group	.0%	100.0%	100.0%
	30-34	Count	0	6	6
		% within Age Group	.0%	100.0%	100.0%
	35-39	Count	0	8	8
		% within Age Group	.0%	100.0%	100.0%
	40-44	Count	0	9	9
		% within Age Group	.0%	100.0%	100.0%
	45-49	Count	1	9	10
		% within Age Group	10.0%	90.0%	100.0%
Total		Count	1	49	50
		% within Age Group	2.0%	98.0%	100.0%

Age Group * Banking Usage Crosstabulation

			Banking Usage		
			No	Yes	Total
Age Group	20-24	Count	3	5	8
		% within Age Group	37.5%	62.5%	100.0%
	25-29	Count	1	8	9
		% within Age Group	11.1%	88.9%	100.0%
	30-34	Count	0	6	6
		% within Age Group	.0%	100.0%	100.0%
	35-39	Count	1	7	8
		% within Age Group	12.5%	87.5%	100.0%
	40-44	Count	0	9	9
		% within Age Group	.0%	100.0%	100.0%
	45-49	Count	3	7	10
		% within Age Group	30.0%	70.0%	100.0%
Total		Count	8	42	50
		% within Age Group	16.0%	84.0%	100.0%

Age Group * Stock Trading Usage Crosstabulation

			Stock Trading Usage	
			No	Total
Age Group	20-24	Count	8	8
		% within Age Group	100.0%	100.0%
	25-29	Count	9	9
		% within Age Group	100.0%	100.0%
	30-34	Count	6	6
		% within Age Group	100.0%	100.0%
	35-39	Count	8	8
		% within Age Group	100.0%	100.0%
	40-44	Count	9	9
		% within Age Group	100.0%	100.0%
	45-49	Count	10	10
		% within Age Group	100.0%	100.0%
Total		Count	50	50
		% within Age Group	100.0%	100.0%

Age Group * Ticketing Usage Crosstabulation

			Ticketing Usage		
			No	Yes	Total
Age Group	20-24	Count	8	0	8
		% within Age Group	100.0%	.0%	100.0%
	25-29	Count	7	2	9
		% within Age Group	77.8%	22.2%	100.0%
	30-34	Count	5	1	6
		% within Age Group	83.3%	16.7%	100.0%
	35-39	Count	5	3	8
		% within Age Group	62.5%	37.5%	100.0%
	40-44	Count	8	1	9
		% within Age Group	88.9%	11.1%	100.0%
	45-49	Count	9	1	10
		% within Age Group	90.0%	10.0%	100.0%
Total		Count	42	8	50
		% within Age Group	84.0%	16.0%	100.0%

Age Group * Shopping Usage Crosstabulation

			Shopping Usage		
			No	Yes	Total
Age Group	20-24	Count	7	1	8
		% within Age Group	87.5%	12.5%	100.0%
	25-29	Count	5	4	9
		% within Age Group	55.6%	44.4%	100.0%
	30-34	Count	5	1	6
		% within Age Group	83.3%	16.7%	100.0%
	35-39	Count	7	1	8
		% within Age Group	87.5%	12.5%	100.0%
	40-44	Count	6	3	9
		% within Age Group	66.7%	33.3%	100.0%
	45-49	Count	8	2	10
		% within Age Group	80.0%	20.0%	100.0%
Total		Count	38	12	50
		% within Age Group	76.0%	24.0%	100.0%

Age Group * Gambling Usage Crosstabulation

			Gambling Usage		
			No	Yes	Total
Age Group	20-24	Count	7	1	8
		% within Age Group	87.5%	12.5%	100.0%
	25-29	Count	9	0	9
		% within Age Group	100.0%	.0%	100.0%
	30-34	Count	6	0	6
		% within Age Group	100.0%	.0%	100.0%
	35-39	Count	8	0	8
		% within Age Group	100.0%	.0%	100.0%
	40-44	Count	8	1	9
		% within Age Group	88.9%	11.1%	100.0%
	45-49	Count	10	0	10
		% within Age Group	100.0%	.0%	100.0%
Total		Count	48	2	50
		% within Age Group	96.0%	4.0%	100.0%

Age Group * Gaming/Logos/Ringtones Usage Crosstabulation

			Gaming/Logos/ Ringtones Usage		
			No	Yes	Total
Age Group	20-24	Count	7	1	8
		% within Age Group	87.5%	12.5%	100.0%
	25-29	Count	7	2	9
		% within Age Group	77.8%	22.2%	100.0%
	30-34	Count	5	1	6
		% within Age Group	83.3%	16.7%	100.0%
	35-39	Count	8	0	8
		% within Age Group	100.0%	.0%	100.0%
	40-44	Count	8	1	9
		% within Age Group	88.9%	11.1%	100.0%
	45-49	Count	10	0	10
		% within Age Group	100.0%	.0%	100.0%
Total		Count	45	5	50
		% within Age Group	90.0%	10.0%	100.0%

Age Group * Payment Usage Crosstabulation

			Payment Usage		
			No	Yes	Total
Age Group	20-24	Count	8	0	8
		% within Age Group	100.0%	.0%	100.0%
	25-29	Count	9	0	9
		% within Age Group	100.0%	.0%	100.0%
	30-34	Count	6	0	6
		% within Age Group	100.0%	.0%	100.0%
	35-39	Count	8	0	8
		% within Age Group	100.0%	.0%	100.0%
	40-44	Count	9	0	9
		% within Age Group	100.0%	.0%	100.0%
	45-49	Count	8	2	10
		% within Age Group	80.0%	20.0%	100.0%
Total		Count	48	2	50
		% within Age Group	96.0%	4.0%	100.0%

Age Group * Video/Music Usage Crosstabulation

			Video/Music Usage		
			No	Yes	Total
Age Group	20-24	Count	8	0	8
		% within Age Group	100.0%	.0%	100.0%
	25-29	Count	6	3	9
		% within Age Group	66.7%	33.3%	100.0%
	30-34	Count	5	1	6
		% within Age Group	83.3%	16.7%	100.0%
	35-39	Count	7	1	8
		% within Age Group	87.5%	12.5%	100.0%
	40-44	Count	7	2	9
		% within Age Group	77.8%	22.2%	100.0%
	45-49	Count	10	0	10
		% within Age Group	100.0%	.0%	100.0%
Total		Count	43	7	50
		% within Age Group	86.0%	14.0%	100.0%

Age Group * Chat Usage Crosstabulation

			Chat Usage		
			No	Yes	Total
Age Group	20-24	Count	7	1	8
		% within Age Group	87.5%	12.5%	100.0%
	25-29	Count	7	2	9
		% within Age Group	77.8%	22.2%	100.0%
	30-34	Count	5	1	6
		% within Age Group	83.3%	16.7%	100.0%
	35-39	Count	6	2	8
		% within Age Group	75.0%	25.0%	100.0%
	40-44	Count	8	1	9
		% within Age Group	88.9%	11.1%	100.0%
	45-49	Count	10	0	10
		% within Age Group	100.0%	.0%	100.0%
Total		Count	43	7	50
		% within Age Group	86.0%	14.0%	100.0%

Age Group * Information Searching Usage Crosstabulation

			Information Searching Usage		
			No	Yes	Total
Age Group	20-24	Count	2	6	8
		% within Age Group	25.0%	75.0%	100.0%
	25-29	Count	1	8	9
		% within Age Group	11.1%	88.9%	100.0%
	30-34	Count	2	4	6
		% within Age Group	33.3%	66.7%	100.0%
	35-39	Count	2	6	8
		% within Age Group	25.0%	75.0%	100.0%
	40-44	Count	0	9	9
		% within Age Group	.0%	100.0%	100.0%
	45-49	Count	3	7	10
		% within Age Group	30.0%	70.0%	100.0%
Total		Count	10	40	50
		% within Age Group	20.0%	80.0%	100.0%

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Age Group * On-line Purchase	50	100.0%	0	.0%	50	100.0%

Age Group * On-line Purchase Crosstabulation

			On-line Purchase		
			No	Yes	Total
Age Group	20-24	Count	6	2	8
		% within Age Group	75.0%	25.0%	100.0%
	25-29	Count	1	8	9
		% within Age Group	11.1%	88.9%	100.0%
	30-34	Count	1	5	6
		% within Age Group	16.7%	83.3%	100.0%
	35-39	Count	5	3	8
		% within Age Group	62.5%	37.5%	100.0%
	40-44	Count	1	8	9
		% within Age Group	11.1%	88.9%	100.0%
	45-49	Count	5	5	10
		% within Age Group	50.0%	50.0%	100.0%
Total		Count	19	31	50
		% within Age Group	38.0%	62.0%	100.0%

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Age Group * Privacy Concerns	50	100.0%	0	.0%	50	100.0%
Age Group * Security Concerns	50	100.0%	0	.0%	50	100.0%
Age Group * Trust Issues	50	100.0%	0	.0%	50	100.0%
Age Group * Lack of Interaction	50	100.0%	0	.0%	50	100.0%

Age Group * Privacy Concerns Crosstabulation

			Privacy Concerns		
			No	Yes	Total
Age Group	20-24	Count	7	1	8
		% within Age Group	87.5%	12.5%	100.0%
	25-29	Count	9	0	9
		% within Age Group	100.0%	.0%	100.0%
	30-34	Count	6	0	6
		% within Age Group	100.0%	.0%	100.0%
	35-39	Count	8	0	8
		% within Age Group	100.0%	.0%	100.0%
	40-44	Count	9	0	9
		% within Age Group	100.0%	.0%	100.0%
	45-49	Count	10	0	10
		% within Age Group	100.0%	.0%	100.0%
Total		Count	49	1	50
		% within Age Group	98.0%	2.0%	100.0%

Age Group * Security Concerns Crosstabulation

			Security Concerns		
			No	Yes	Total
Age Group	20-24	Count	4	4	8
		% within Age Group	50.0%	50.0%	100.0%
	25-29	Count	8	1	9
		% within Age Group	88.9%	11.1%	100.0%
	30-34	Count	5	1	6
		% within Age Group	83.3%	16.7%	100.0%
	35-39	Count	5	3	8
		% within Age Group	62.5%	37.5%	100.0%
	40-44	Count	9	0	9
		% within Age Group	100.0%	.0%	100.0%
	45-49	Count	6	4	10
		% within Age Group	60.0%	40.0%	100.0%
Total		Count	37	13	50
		% within Age Group	74.0%	26.0%	100.0%

Age Group * Trust Issues Crosstabulation

			Trust Issues		
			No	Yes	Total
Age Group	20-24	Count	7	1	8
		% within Age Group	87.5%	12.5%	100.0%
	25-29	Count	9	0	9
		% within Age Group	100.0%	.0%	100.0%
	30-34	Count	6	0	6
		% within Age Group	100.0%	.0%	100.0%
	35-39	Count	6	2	8
		% within Age Group	75.0%	25.0%	100.0%
	40-44	Count	8	1	9
		% within Age Group	88.9%	11.1%	100.0%
	45-49	Count	10	0	10
		% within Age Group	100.0%	.0%	100.0%
Total		Count	46	4	50
		% within Age Group	92.0%	8.0%	100.0%

Age Group * Lack of Interaction Crosstabulation

			Lack of Interaction		
			No	Yes	Total
Age Group	20-24	Count	7	1	8
		% within Age Group	87.5%	12.5%	100.0%
	25-29	Count	9	0	9
		% within Age Group	100.0%	.0%	100.0%
	30-34	Count	6	0	6
		% within Age Group	100.0%	.0%	100.0%
	35-39	Count	7	1	8
		% within Age Group	87.5%	12.5%	100.0%
	40-44	Count	9	0	9
		% within Age Group	100.0%	.0%	100.0%
	45-49	Count	9	1	10
		% within Age Group	90.0%	10.0%	100.0%
Total		Count	47	3	50
		% within Age Group	94.0%	6.0%	100.0%

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Age Group * Mobile Purchase	50	100.0%	0	.0%	50	100.0%

Age Group * Mobile Purchase Crosstabulation

			Mobile Purchase		
			No	Yes	Total
Age Group	20-24	Count	7	1	8
		% within Age Group	87.5%	12.5%	100.0%
	25-29	Count	5	4	9
		% within Age Group	55.6%	44.4%	100.0%
	30-34	Count	6	0	6
		% within Age Group	100.0%	.0%	100.0%
	35-39	Count	7	1	8
		% within Age Group	87.5%	12.5%	100.0%
	40-44	Count	8	1	9
		% within Age Group	88.9%	11.1%	100.0%
	45-49	Count	9	1	10
		% within Age Group	90.0%	10.0%	100.0%
Total		Count	42	8	50
		% within Age Group	84.0%	16.0%	100.0%

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Age Group * M-commerce Development Awareness	50	100.0%	0	.0%	50	100.0%

Age Group * M-commerce Development Awareness Crosstabulation

			M-commerce Development Awareness		
			No	Yes	Total
Age Group	20-24	Count	1	7	8
		% within Age Group	12.5%	87.5%	100.0%
	25-29	Count	0	9	9
		% within Age Group	.0%	100.0%	100.0%
	30-34	Count	1	5	6
		% within Age Group	16.7%	83.3%	100.0%
	35-39	Count	1	7	8
		% within Age Group	12.5%	87.5%	100.0%
	40-44	Count	2	7	9
		% within Age Group	22.2%	77.8%	100.0%
	45-49	Count	3	7	10
		% within Age Group	30.0%	70.0%	100.0%
Total		Count	8	42	50
		% within Age Group	16.0%	84.0%	100.0%

Multiple Response

```
Group $HowKnow  Ways of Knowing
     (Value tabulated = 1)

                                                          Pct of  Pct of
Dichotomy label                          Name       Count  Responses  Cases

TV                                       TV             6      7.1     14.0
Newspaper                                Newspape      22     25.9     51.2
Magazines                                Magazine       6      7.1     14.0
Internet                                 Internet       9     10.6     20.9
Friends                                  Friends       33     38.8     76.7
Family                                   Family         9     10.6     20.9
                                                     -------    -----    -----
                                 Total responses        85    100.0    197.7

7 missing cases;  43 valid cases

Abbreviated  Extended
Name         Name

Magazine     Magazines
Newspape     Newspaper
```

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Age Group * Mobile News	50	100.0%	0	.0%	50	100.0%
Age Group * Mobile E-mail	50	100.0%	0	.0%	50	100.0%
Age Group * Mobile Banking	50	100.0%	0	.0%	50	100.0%
Age Group * Mobile Stock	50	100.0%	0	.0%	50	100.0%
Age Group * Mobile Ticketing	50	100.0%	0	.0%	50	100.0%
Age Group * Mobile Shopping	50	100.0%	0	.0%	50	100.0%
Age Group * Mobile Gambling	50	100.0%	0	.0%	50	100.0%
Age Group * Mobile Games/Ringtones/Logos	50	100.0%	0	.0%	50	100.0%
Age Group * Mobile GPS	50	100.0%	0	.0%	50	100.0%
Age Group * Location Based Services	50	100.0%	0	.0%	50	100.0%
Age Group * Mobile Advertising	50	100.0%	0	.0%	50	100.0%
Age Group * Mobile Payments	50	100.0%	0	.0%	50	100.0%
Age Group * Mobile Digital Content	50	100.0%	0	.0%	50	100.0%
Age Group * Mobile Chat	50	100.0%	0	.0%	50	100.0%
Age Group * Mobile Internet Search	50	100.0%	0	.0%	50	100.0%

Age Group * Mobile News Crosstabulation

			Mobile News		
			No	Yes	Total
Age Group	20-24	Count	6	2	8
		% within Age Group	75.0%	25.0%	100.0%
	25-29	Count	4	5	9
		% within Age Group	44.4%	55.6%	100.0%
	30-34	Count	4	2	6
		% within Age Group	66.7%	33.3%	100.0%
	35-39	Count	4	4	8
		% within Age Group	50.0%	50.0%	100.0%
	40-44	Count	6	3	9
		% within Age Group	66.7%	33.3%	100.0%
	45-49	Count	4	6	10
		% within Age Group	40.0%	60.0%	100.0%
Total		Count	28	22	50
		% within Age Group	56.0%	44.0%	100.0%

Age Group * Mobile E-mail Crosstabulation

			Mobile E-mail		
			No	Yes	Total
Age Group	20-24	Count	2	6	8
		% within Age Group	25.0%	75.0%	100.0%
	25-29	Count	3	6	9
		% within Age Group	33.3%	66.7%	100.0%
	30-34	Count	0	6	6
		% within Age Group	.0%	100.0%	100.0%
	35-39	Count	3	5	8
		% within Age Group	37.5%	62.5%	100.0%
	40-44	Count	1	8	9
		% within Age Group	11.1%	88.9%	100.0%
	45-49	Count	2	8	10
		% within Age Group	20.0%	80.0%	100.0%
Total		Count	11	39	50
		% within Age Group	22.0%	78.0%	100.0%

Age Group * Mobile Banking Crosstabulation

			Mobile Banking		
			No	Yes	Total
Age Group	20-24	Count	2	6	8
		% within Age Group	25.0%	75.0%	100.0%
	25-29	Count	3	6	9
		% within Age Group	33.3%	66.7%	100.0%
	30-34	Count	2	4	6
		% within Age Group	33.3%	66.7%	100.0%
	35-39	Count	1	7	8
		% within Age Group	12.5%	87.5%	100.0%
	40-44	Count	1	8	9
		% within Age Group	11.1%	88.9%	100.0%
	45-49	Count	3	7	10
		% within Age Group	30.0%	70.0%	100.0%
Total		Count	12	38	50
		% within Age Group	24.0%	76.0%	100.0%

Age Group * Mobile Stock Crosstabulation

			Mobile Stock		
			No	Yes	Total
Age Group	20-24	Count	7	1	8
		% within Age Group	87.5%	12.5%	100.0%
	25-29	Count	9	0	9
		% within Age Group	100.0%	.0%	100.0%
	30-34	Count	6	0	6
		% within Age Group	100.0%	.0%	100.0%
	35-39	Count	8	0	8
		% within Age Group	100.0%	.0%	100.0%
	40-44	Count	9	0	9
		% within Age Group	100.0%	.0%	100.0%
	45-49	Count	10	0	10
		% within Age Group	100.0%	.0%	100.0%
Total		Count	49	1	50
		% within Age Group	98.0%	2.0%	100.0%

Age Group * Mobile Ticketing Crosstabulation

			Mobile Ticketing		
			No	Yes	Total
Age Group	20-24	Count	6	2	8
		% within Age Group	75.0%	25.0%	100.0%
	25-29	Count	6	3	9
		% within Age Group	66.7%	33.3%	100.0%
	30-34	Count	5	1	6
		% within Age Group	83.3%	16.7%	100.0%
	35-39	Count	5	3	8
		% within Age Group	62.5%	37.5%	100.0%
	40-44	Count	8	1	9
		% within Age Group	88.9%	11.1%	100.0%
	45-49	Count	7	3	10
		% within Age Group	70.0%	30.0%	100.0%
Total		Count	37	13	50
		% within Age Group	74.0%	26.0%	100.0%

Age Group * Mobile Shopping Crosstabulation

			Mobile Shopping		
			No	Yes	Total
Age Group	20-24	Count	8	0	8
		% within Age Group	100.0%	.0%	100.0%
	25-29	Count	8	1	9
		% within Age Group	88.9%	11.1%	100.0%
	30-34	Count	5	1	6
		% within Age Group	83.3%	16.7%	100.0%
	35-39	Count	8	0	8
		% within Age Group	100.0%	.0%	100.0%
	40-44	Count	9	0	9
		% within Age Group	100.0%	.0%	100.0%
	45-49	Count	8	2	10
		% within Age Group	80.0%	20.0%	100.0%
Total		Count	46	4	50
		% within Age Group	92.0%	8.0%	100.0%

Age Group * Mobile Gambling Crosstabulation

			Mobile Gambling	
			No	Total
Age Group	20-24	Count	8	8
		% within Age Group	100.0%	100.0%
	25-29	Count	9	9
		% within Age Group	100.0%	100.0%
	30-34	Count	6	6
		% within Age Group	100.0%	100.0%
	35-39	Count	8	8
		% within Age Group	100.0%	100.0%
	40-44	Count	9	9
		% within Age Group	100.0%	100.0%
	45-49	Count	10	10
		% within Age Group	100.0%	100.0%
Total		Count	50	50
		% within Age Group	100.0%	100.0%

Age Group * Mobile Games/Ringtones/Logos Crosstabulation

			Mobile Games/Ringtones/ Logos		
			No	Yes	Total
Age Group	20-24	Count	7	1	8
		% within Age Group	87.5%	12.5%	100.0%
	25-29	Count	9	0	9
		% within Age Group	100.0%	.0%	100.0%
	30-34	Count	6	0	6
		% within Age Group	100.0%	.0%	100.0%
	35-39	Count	7	1	8
		% within Age Group	87.5%	12.5%	100.0%
	40-44	Count	7	2	9
		% within Age Group	77.8%	22.2%	100.0%
	45-49	Count	10	0	10
		% within Age Group	100.0%	.0%	100.0%
Total		Count	46	4	50
		% within Age Group	92.0%	8.0%	100.0%

Age Group * Mobile GPS Crosstabulation

			Mobile GPS		
			No	Yes	Total
Age Group	20-24	Count	7	1	8
		% within Age Group	87.5%	12.5%	100.0%
	25-29	Count	8	1	9
		% within Age Group	88.9%	11.1%	100.0%
	30-34	Count	6	0	6
		% within Age Group	100.0%	.0%	100.0%
	35-39	Count	7	1	8
		% within Age Group	87.5%	12.5%	100.0%
	40-44	Count	9	0	9
		% within Age Group	100.0%	.0%	100.0%
	45-49	Count	10	0	10
		% within Age Group	100.0%	.0%	100.0%
Total		Count	47	3	50
		% within Age Group	94.0%	6.0%	100.0%

Age Group * Location Based Services Crosstabulation

			Location Based Services		
			No	Yes	Total
Age Group	20-24	Count	8	0	8
		% within Age Group	100.0%	.0%	100.0%
	25-29	Count	8	1	9
		% within Age Group	88.9%	11.1%	100.0%
	30-34	Count	6	0	6
		% within Age Group	100.0%	.0%	100.0%
	35-39	Count	8	0	8
		% within Age Group	100.0%	.0%	100.0%
	40-44	Count	8	1	9
		% within Age Group	88.9%	11.1%	100.0%
	45-49	Count	10	0	10
		% within Age Group	100.0%	.0%	100.0%
Total		Count	48	2	50
		% within Age Group	96.0%	4.0%	100.0%

Age Group * Mobile Advertising Crosstabulation

			Mobile Advertising		
			No	Yes	Total
Age Group	20-24	Count	8	0	8
		% within Age Group	100.0%	.0%	100.0%
	25-29	Count	9	0	9
		% within Age Group	100.0%	.0%	100.0%
	30-34	Count	6	0	6
		% within Age Group	100.0%	.0%	100.0%
	35-39	Count	8	0	8
		% within Age Group	100.0%	.0%	100.0%
	40-44	Count	9	0	9
		% within Age Group	100.0%	.0%	100.0%
	45-49	Count	9	1	10
		% within Age Group	90.0%	10.0%	100.0%
Total		Count	49	1	50
		% within Age Group	98.0%	2.0%	100.0%

Age Group * Mobile Payments Crosstabulation

			Mobile Payments		
			No	Yes	Total
Age Group	20-24	Count	7	1	8
		% within Age Group	87.5%	12.5%	100.0%
	25-29	Count	6	3	9
		% within Age Group	66.7%	33.3%	100.0%
	30-34	Count	4	2	6
		% within Age Group	66.7%	33.3%	100.0%
	35-39	Count	8	0	8
		% within Age Group	100.0%	.0%	100.0%
	40-44	Count	8	1	9
		% within Age Group	88.9%	11.1%	100.0%
	45-49	Count	8	2	10
		% within Age Group	80.0%	20.0%	100.0%
Total		Count	41	9	50
		% within Age Group	82.0%	18.0%	100.0%

Age Group * Mobile Digital Content Crosstabulation

			Mobile Digital Content		
			No	Yes	Total
Age Group	20-24	Count	8	0	8
		% within Age Group	100.0%	.0%	100.0%
	25-29	Count	9	0	9
		% within Age Group	100.0%	.0%	100.0%
	30-34	Count	5	1	6
		% within Age Group	83.3%	16.7%	100.0%
	35-39	Count	7	1	8
		% within Age Group	87.5%	12.5%	100.0%
	40-44	Count	8	1	9
		% within Age Group	88.9%	11.1%	100.0%
	45-49	Count	10	0	10
		% within Age Group	100.0%	.0%	100.0%
Total		Count	47	3	50
		% within Age Group	94.0%	6.0%	100.0%

Age Group * Mobile Chat Crosstabulation

			Mobile Chat		
			No	Yes	Total
Age Group	20-24	Count	7	1	8
		% within Age Group	87.5%	12.5%	100.0%
	25-29	Count	9	0	9
		% within Age Group	100.0%	.0%	100.0%
	30-34	Count	6	0	6
		% within Age Group	100.0%	.0%	100.0%
	35-39	Count	7	1	8
		% within Age Group	87.5%	12.5%	100.0%
	40-44	Count	9	0	9
		% within Age Group	100.0%	.0%	100.0%
	45-49	Count	10	0	10
		% within Age Group	100.0%	.0%	100.0%
Total		Count	48	2	50
		% within Age Group	96.0%	4.0%	100.0%

Age Group * Mobile Internet Search Crosstabulation

			Mobile Internet Search		
			No	Yes	Total
Age Group	20-24	Count	4	4	8
		% within Age Group	50.0%	50.0%	100.0%
	25-29	Count	8	1	9
		% within Age Group	88.9%	11.1%	100.0%
	30-34	Count	5	1	6
		% within Age Group	83.3%	16.7%	100.0%
	35-39	Count	7	1	8
		% within Age Group	87.5%	12.5%	100.0%
	40-44	Count	7	2	9
		% within Age Group	77.8%	22.2%	100.0%
	45-49	Count	9	1	10
		% within Age Group	90.0%	10.0%	100.0%
Total		Count	40	10	50
		% within Age Group	80.0%	20.0%	100.0%

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Age Group * Mobile Privacy Concerns	50	100.0%	0	.0%	50	100.0%
Age Group * Mobile Security Concerns	50	100.0%	0	.0%	50	100.0%
Age Group * Mobile Phone Prices	50	100.0%	0	.0%	50	100.0%
Age Group * Mobile Subscription Fees	50	100.0%	0	.0%	50	100.0%
Age Group * Mobile Loading/Connection Speed	50	100.0%	0	.0%	50	100.0%
Age Group * Mobile Functionality	50	100.0%	0	.0%	50	100.0%

Age Group * Mobile Privacy Concerns Crosstabulation

			Mobile Privacy Concerns			
			Very Important	Quite Important	Neutral	Not Very Important
Age Group	20-24	Count	6	1	1	0
		% within Age Group	75.0%	12.5%	12.5%	.0%
	25-29	Count	6	2	1	0
		% within Age Group	66.7%	22.2%	11.1%	.0%
	30-34	Count	0	1	2	3
		% within Age Group	.0%	16.7%	33.3%	50.0%
	35-39	Count	0	3	3	2
		% within Age Group	.0%	37.5%	37.5%	25.0%
	40-44	Count	4	1	1	1
		% within Age Group	44.4%	11.1%	11.1%	11.1%
	45-49	Count	2	1	3	4
		% within Age Group	20.0%	10.0%	30.0%	40.0%
Total		Count	18	9	11	10
		% within Age Group	36.0%	18.0%	22.0%	20.0%

Age Group * Mobile Privacy Concerns Crosstabulation

			Mobile Privacy Concerns	
			Not Important	Total
Age Group	20-24	Count	0	8
		% within Age Group	.0%	100.0%
	25-29	Count	0	9
		% within Age Group	.0%	100.0%
	30-34	Count	0	6
		% within Age Group	.0%	100.0%
	35-39	Count	0	8
		% within Age Group	.0%	100.0%
	40-44	Count	2	9
		% within Age Group	22.2%	100.0%
	45-49	Count	0	10
		% within Age Group	.0%	100.0%
Total		Count	2	50
		% within Age Group	4.0%	100.0%

Age Group * Mobile Security Concerns Crosstabulation

			Mobile Security Concerns			
			Very Important	Quite Important	Neutral	Not Very Important
Age Group	20-24	Count	7	1	0	0
		% within Age Group	87.5%	12.5%	.0%	.0%
	25-29	Count	8	0	1	0
		% within Age Group	88.9%	.0%	11.1%	.0%
	30-34	Count	3	0	1	2
		% within Age Group	50.0%	.0%	16.7%	33.3%
	35-39	Count	3	2	1	0
		% within Age Group	37.5%	25.0%	12.5%	.0%
	40-44	Count	6	2	0	0
		% within Age Group	66.7%	22.2%	.0%	.0%
	45-49	Count	7	1	0	1
		% within Age Group	70.0%	10.0%	.0%	10.0%
Total		Count	34	6	3	3
		% within Age Group	68.0%	12.0%	6.0%	6.0%

Age Group * Mobile Security Concerns Crosstabulation

			Mobile	
			Not Important	Total
Age Group	20-24	Count	0	8
		% within Age Group	.0%	100.0%
	25-29	Count	0	9
		% within Age Group	.0%	100.0%
	30-34	Count	0	6
		% within Age Group	.0%	100.0%
	35-39	Count	2	8
		% within Age Group	25.0%	100.0%
	40-44	Count	1	9
		% within Age Group	11.1%	100.0%
	45-49	Count	1	10
		% within Age Group	10.0%	100.0%
Total		Count	4	50
		% within Age Group	8.0%	100.0%

Age Group * Mobile Phone Prices Crosstabulation

			Mobile Phone Prices			
			Very Important	Quite Important	Neutral	Not Very Important
Age Group	20-24	Count	1	1	3	0
		% within Age Group	12.5%	12.5%	37.5%	.0%
	25-29	Count	0	2	4	3
		% within Age Group	.0%	22.2%	44.4%	33.3%
	30-34	Count	2	4	0	0
		% within Age Group	33.3%	66.7%	.0%	.0%
	35-39	Count	2	1	4	1
		% within Age Group	25.0%	12.5%	50.0%	12.5%
	40-44	Count	1	4	2	0
		% within Age Group	11.1%	44.4%	22.2%	.0%
	45-49	Count	0	1	3	4
		% within Age Group	.0%	10.0%	30.0%	40.0%
Total		Count	6	13	16	8
		% within Age Group	12.0%	26.0%	32.0%	16.0%

Age Group * Mobile Phone Prices Crosstabulation

			Mobile Phone	
			Not Important	Total
Age Group	20-24	Count	3	8
		% within Age Group	37.5%	100.0%
	25-29	Count	0	9
		% within Age Group	.0%	100.0%
	30-34	Count	0	6
		% within Age Group	.0%	100.0%
	35-39	Count	0	8
		% within Age Group	.0%	100.0%
	40-44	Count	2	9
		% within Age Group	22.2%	100.0%
	45-49	Count	2	10
		% within Age Group	20.0%	100.0%
Total		Count	7	50
		% within Age Group	14.0%	100.0%

Age Group * Mobile Subscription Fees Crosstabulation

			Mobile Subscription Fees			
			Very Important	Quite Important	Neutral	Not Very Important
Age Group	20-24	Count	1	5	1	1
		% within Age Group	12.5%	62.5%	12.5%	12.5%
	25-29	Count	1	3	3	2
		% within Age Group	11.1%	33.3%	33.3%	22.2%
	30-34	Count	1	5	0	0
		% within Age Group	16.7%	83.3%	.0%	.0%
	35-39	Count	1	2	4	1
		% within Age Group	12.5%	25.0%	50.0%	12.5%
	40-44	Count	3	3	2	1
		% within Age Group	33.3%	33.3%	22.2%	11.1%
	45-49	Count	1	2	3	3
		% within Age Group	10.0%	20.0%	30.0%	30.0%
Total		Count	8	20	13	8
		% within Age Group	16.0%	40.0%	26.0%	16.0%

Age Group * Mobile Subscription Fees Crosstabulation

			Mobile	
			Not Important	Total
Age Group	20-24	Count	0	8
		% within Age Group	.0%	100.0%
	25-29	Count	0	9
		% within Age Group	.0%	100.0%
	30-34	Count	0	6
		% within Age Group	.0%	100.0%
	35-39	Count	0	8
		% within Age Group	.0%	100.0%
	40-44	Count	0	9
		% within Age Group	.0%	100.0%
	45-49	Count	1	10
		% within Age Group	10.0%	100.0%
Total		Count	1	50
		% within Age Group	2.0%	100.0%

Age Group * Mobile Loading/Connection Speed Crosstabulation

			Mobile Loading/Connection Speed			
			Very Important	Quite Important	Neutral	Not Very Important
Age Group	20-24	Count	2	2	3	1
		% within Age Group	25.0%	25.0%	37.5%	12.5%
	25-29	Count	5	3	1	0
		% within Age Group	55.6%	33.3%	11.1%	.0%
	30-34	Count	0	3	3	0
		% within Age Group	.0%	50.0%	50.0%	.0%
	35-39	Count	2	4	1	1
		% within Age Group	25.0%	50.0%	12.5%	12.5%
	40-44	Count	4	2	1	1
		% within Age Group	44.4%	22.2%	11.1%	11.1%
	45-49	Count	1	3	3	2
		% within Age Group	10.0%	30.0%	30.0%	20.0%
Total		Count	14	17	12	5
		% within Age Group	28.0%	34.0%	24.0%	10.0%

Age Group * Mobile Loading/Connection Speed Crosstabulation

			Mobile	
			Not Important	Total
Age Group	20-24	Count	0	8
		% within Age Group	.0%	100.0%
	25-29	Count	0	9
		% within Age Group	.0%	100.0%
	30-34	Count	0	6
		% within Age Group	.0%	100.0%
	35-39	Count	0	8
		% within Age Group	.0%	100.0%
	40-44	Count	1	9
		% within Age Group	11.1%	100.0%
	45-49	Count	1	10
		% within Age Group	10.0%	100.0%
Total		Count	2	50
		% within Age Group	4.0%	100.0%

Age Group * Mobile Functionality Crosstabulation

			Mobile Functionality			
			Very Important	Quite Important	Neutral	Not Very Important
Age Group	20-24	Count	5	1	0	2
		% within Age Group	62.5%	12.5%	.0%	25.0%
	25-29	Count	4	3	2	0
		% within Age Group	44.4%	33.3%	22.2%	.0%
	30-34	Count	0	2	2	2
		% within Age Group	.0%	33.3%	33.3%	33.3%
	35-39	Count	3	1	4	0
		% within Age Group	37.5%	12.5%	50.0%	.0%
	40-44	Count	5	2	0	1
		% within Age Group	55.6%	22.2%	.0%	11.1%
	45-49	Count	3	2	5	0
		% within Age Group	30.0%	20.0%	50.0%	.0%
Total		Count	20	11	13	5
		% within Age Group	40.0%	22.0%	26.0%	10.0%

Age Group * Mobile Functionality Crosstabulation

			Mobile	
			Not Important	Total
Age Group	20-24	Count	0	8
		% within Age Group	.0%	100.0%
	25-29	Count	0	9
		% within Age Group	.0%	100.0%
	30-34	Count	0	6
		% within Age Group	.0%	100.0%
	35-39	Count	0	8
		% within Age Group	.0%	100.0%
	40-44	Count	1	9
		% within Age Group	11.1%	100.0%
	45-49	Count	0	10
		% within Age Group	.0%	100.0%
Total		Count	1	50
		% within Age Group	2.0%	100.0%

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Age Group * Consider Using M-commerce	50	100.0%	0	.0%	50	100.0%

Age Group * Consider Using M-commerce Crosstabulation

			Consider Using M-commerce		
			No	Yes	Total
Age Group	20-24	Count	1	7	8
		% within Age Group	12.5%	87.5%	100.0%
	25-29	Count	1	8	9
		% within Age Group	11.1%	88.9%	100.0%
	30-34	Count	0	6	6
		% within Age Group	.0%	100.0%	100.0%
	35-39	Count	2	6	8
		% within Age Group	25.0%	75.0%	100.0%
	40-44	Count	2	7	9
		% within Age Group	22.2%	77.8%	100.0%
	45-49	Count	1	9	10
		% within Age Group	10.0%	90.0%	100.0%
Total		Count	7	43	50
		% within Age Group	14.0%	86.0%	100.0%

Multiple Response

Group $Adoptio AdoptionConcerns
     (Value tabulated = 1)

Dichotomy label	Name	Count	Pct of Responses	Pct of Cases
Do Not Need It	Dontneed	2	28.6	28.6
Prefer Computer	Prefercp	2	28.6	28.6
Wait and See	Waitands	2	28.6	28.6
No Particular Reason	Noreason	1	14.3	14.3
	Total responses	7	100.0	100.0

43 missing cases; 7 valid cases

Abbreviated Name	Extended Name
$Adoptio	$Adoption
Prefercp	Prefercpu
Waitands	Waitandsee

Multiple Response

Group $MConcer MConcerns
     (Value tabulated = 1)

Dichotomy label	Name	Count	Pct of Responses	Pct of Cases
Mobile Privacy Concerns	Privacy2	18	18.0	43.9
Mobile Security Concerns	Securi_1	34	34.0	82.9
Mobile Phone Prices	Price	6	6.0	14.6
Mobile Subscription Fees	Subfees	8	8.0	19.5
Mobile Loading/Connection Speed	LoadSpee	14	14.0	34.1
Mobile Functionality	Function	20	20.0	48.8
	Total responses	100	100.0	243.9

9 missing cases; 41 valid cases

Abbreviated Name	Extended Name
Function	Functionality
LoadSpee	LoadSpeed
Securi_1	Security